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THESIS

DECISION MAKING UNDER CRISIS CONDITIONS: CONSIDERATIONS AND PROCEDURES

by

Werner Wilfried Jung

June 1979

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extraordinary resources, multiple, simultaneous problems, time constraints, stress, change in power structures, and change in communication and information patterns. The following decision-making procedure is suggested: Establishing psychological equilibrium at all levels, structuring of the problems, adapting the organizational structure, assigning responsibilities for solving problems, establishing a time budget, coordination, and implementation and control. Preparatory measures can help to avoid crises, or at least to improve coping abilities.

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Decision Making Under Crisis Conditions: Considerations and Procedures

by

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Major GS, Swiss Army

Submitted in partial fulfillment of the
requirements for the degree of

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I. INTRODUCTION

Crises change the normal activities of organizations. They occur in different ways, and often happen unexpectedly and suddenly. Leaders and managers at every level face extraordinary problems and are more or less accustomed to handling such special situations.

The first objective of this thesis is to provide insight into the development of crises in organizations and their impacts on the elements that are relevant in the decision-making process. The second objective is to show the specifically important factors a leader or manager has to consider when making decisions in crises. The last objective is to develop a basic integrative decision-making model which will help a manager to cope systematically and effectively with crisis situations.

The expositions are especially aimed at the leader or manager whose organization faces real crises only exceptionally. Their scope includes higher command or management levels, disposing of staff personnel, though some more general aspects may be of broader interest.

II. BACKGROUND

A. DEFINITION

Several definitions exist for the word "crisis." Some examples out of Webster's Third New International Dictionary [Ref. 49]:

> The point of time when it is decided whether an affair or course of action shall proceed, be modified, or terminate.
>
> The immediate sequal to the culminating point of a period of prosperity and rising markets at which the business organism is severely strained and forced liquidation occurs.
>
> An unstable state of affairs in which a decisive change is impending.
>
> A psychological or social condition characterized by unusual instability caused by excessive stress and either endangering or felt to endanger the continuity of the individual or his group.

The famous French Dictionary Grand Larousse Encyclopédique [Ref. 15] provides partially similar definitions. The interesting thing is that neither Webster nor Larousse relate crises especially to the military in combat as they do for medicine, economics, and other sciences or fields. The New Columbia Encyclopedia even neglects all types of crises except economic ones [Ref. 43]. Nevertheless, military in combat face crises containing all important aspects: psychological, sociological, physiological, economic, technological, political and legal.

Of the above definitions, the third one seems to be the one of most general applicability for this study, although

it is not specific enough to give a sufficient idea of the characteristics of crises.

The Encyclopedia Americana [Ref. 42] mentions under "CRISIS" only the 16 political pamphlets by Thomas Paine and cites the beginning sentence of the first pamphlet:

> "These are the times that try men's souls."

This sentence, though sounding very dramatic, states in fine and simple words the very true and important fact that superior forces and abilities are needed to cope with crises, and crises are therefore something extraordinary.

For the purpose of this thesis, there is no need to create a new definition, but it is important to stress the relevant characteristics of crises:

- Crises disrupt formalized or normal procedures and therefore represent extraordinary situations with uncertain outcomes.

  The risk is high that short and/or long term goals cannot be fulfilled or that even survival may be impossible.
- Extraordinary resources (capital, labor, material) are necessary to solve crises. These additional resources are at the upper limit or exceed those available to the involved management level.
- In many cases several problems arise simultaneously or in very quick sequence.
- In most cases there is a severe time constraint for the decision-making process in the sense that crisis

situations deteriorate rapidly if adequate countermeasures are not taken.

B. THE ELEMENTS INVOLVED IN CRISES

Four main elements act as variables in a crisis:

- The external environment
- The internal environment
- The crisis affected segment of the organization, called the "crisis segment"
- The physical and/or psychological center of the crisis, called the "crisis center"

The relationship between these elements is shown in Figure 1.

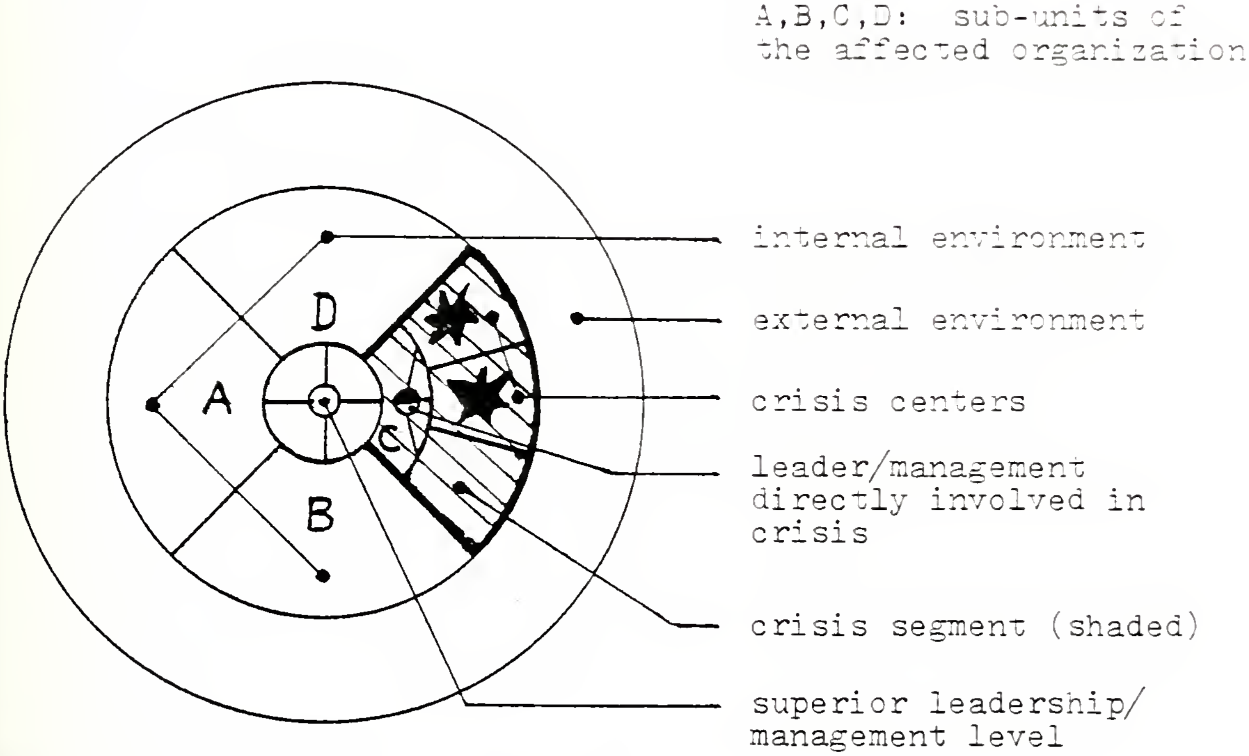

A,B,C,D: sub-units of the affected organization
D
A
C
B
internal environment
external environment
crisis centers
leader/management directly involved in crisis
crisis segment (shaded)
superior leadership/ management level

Figure 1

The Crisis-Affected Organization and its Environment

The above notions will be used during the further discussion.

1. The External Environment

Hall distinguishes between a general environment and a specific environment.

The general environment is further characterized by the following factors:

- Technological conditions
- Legal conditions
- Political conditions
- Economic conditions
- Demographic conditions
- Ecological conditions
- Cultural conditions

The specific environment or inter-organizational relationship is composed of the organizations and individuals with which an organization is in direct interaction. [Ref. 18, pp. 303-332]

2. The Internal Environment

The internal environment consists of all parts of the organization which are not directly affected by the crisis.

3. The Crisis Segment

For this part of the organization, the crisis criteria apply. It is assumed that the crisis segment is composed of the following elements:

- A leader or manager and his staff who are still able to make decisions
- Crisis-affected subunits called crisis centers which may or may not be able to make decisions at their level
- Resources (capital, labor, material) that can be shifted in order to cope with crises. These resources may or may not be sufficient

As can be seen in Figure 1, there might be some subunits in the crisis segment which are subordinated to the same leadership or management as are the crisis centers, but which are not directly affected by the crisis. These subunits, therefore, also belong to the internal environment.

III. INTERACTIONS BETWEEN THE CRISIS SEGMENT OF THE ORGANIZATION AND ITS ENVIRONMENT

A. DEVELOPMENT OF CRISES

Generally a crisis develops if an organization is, at least for a certain time, unable to cope with its environment in such a way that minimum short term or long term goals can be met. In many cases this even means a temporary inability to assure survival. The reasons for crises development are two-fold:

- change in the environment
- changes within the organization.

1. Change in the Environment

Certain environmental factors such as technological, political and economic conditions can change rapidly so that the organization gets into crisis situations primarily because of the time constraints in coping with the change.

Other environmental factors will normally not change rapidly, e.g. demographic, ecological or cultural conditions. But even changes in these environments can lead to crises if they are ignored over a long period of time or not recognized by management. Only environmental factors that can change rapidly in relation to the coping ability of an organization will be discussed.

It is important to recognize that the word "rapid" has a very relative meaning. Depending on the kind of goals, structures, investments and communications, environmental changes will be perceived as rapid by some organizations, while others will classify the same changes as slow. For example, the stockmarket is able to react within minutes to changes in economic or political conditions, while shipbuilders definitely need more time to adapt. Hence, the notion "rapid change" will be used as it is perceived as such by an organization.

Below in a - f, a further description is presented on how environmental factors might change.

a. Change in Technological Conditions

Breakthroughs in technology can change the environment in a way which might be perceived as a rapid change that can lead to crises, especially if the new technology was introduced by a competitor. Marketing might get into deep trouble due to inability to sell the goods developed with the old technology. Production will follow marketing due to obsolescence of raw materials, machinery, unfinished and finished goods. Idle labor can cause additional serious problems. If the technological breakthrough happened within the organization itself, some effects might be opposite, e.g. crisis in production due to the pressure for change to meet increasing demand.

In the military, a change in technology can lead to new kinds of threats which might create crisis situations

if adequate countermeasures have not first been developed. An extreme example is the development and engagement of atomic weapons during WW II.

b. Change in Legal Conditions

Changes in legal conditions normally are due to changes in constitutions, laws and regulations. These changes can work in two ways:

Deregulations might lead to crises in some organizations because protective features are eliminated and competition becomes a major threat.

In our society, deregulations are outnumbered by new laws and regulations which curb freedom. Restrictions are imposed which can lead to crises in organizations because they require major changes, increasing the organizations' costs and eventually threatening its survival.

Examples:
- Anti-pollution regulations require major capital outlays for sewage systems, filtering equipment, protection against radiation, or they simply prohibit continuing operations. (For example the operation of nuclear power plants were prohibited by the peoples' vote in Austria).
- Certain ingredients in food production are prohibited due to discovered health hazards.
- New safety standards may require major capital outlays.

c. Change in Political Conditions

Especially in politically unstable countries, conditions may be changed overnight by military coups or other major events. This normally leads all organizations which are in any way opposed to the new political leadership into crisis. Even less dramatic changes can have severe effects on organizations. For instance, political conditions can have a major influence on laws and regulations, with the effects as discussed earlier.

As Hall points out:

> The strong political pressures to reduce military and aerospace spending have led to crises of one sort or another for organizations in those areas. Police departments are buffeted back and forth between support for "law and order" and condemnation of "police brutality." School systems have drastically altered parts of their curricula in the face of threats from groups concerned with such topics as sex education or left-wing textbooks. [Ref. 18, p. 307]

If "war is the continuation of politics by different means," as was stated by the famous Clausewitz, war represents an extreme political situation and may be the ultimate source of any kind of crises. The following are examples of such situations:

- scarcity of raw materials or labor
- reduced demand and therefore idle production facilities
- increased demand in certain areas and therefore over-utilization of resources.
- wartime restrictions in prices, wages, procedures

- physical destructions as a result of enemy actions.

d. Change in Economic Conditions

Economic conditions can change rapidly enough to produce crises, especially in business-oriented organizations, because of lagging demand and therefore idle production capacity, or on the opposite side, increased demand and over-utilization of resources.

A change in economic conditions can also have major impacts on the availability of capital:

> ...commercial bankers must limit their risk taking to situations that promise an acceptable return for the risk of losses and the total relationship with the customer. [Ref. 21, p. 220]

In deteriorating economic conditions, when capital might be needed, for example, to build up inventories, the risk for the creditor becomes higher and his loan policy probably tighter. This can lead to crisis situations on the debtor's side.

e. Changes in Demographic, Ecological or Cultural Conditions

As was mentioned before, these factors do not change so rapidly that an organization with a somewhat capable management should get into trouble.

On the other hand, rapid changes can be produced artificially if businesses are transferred to other regions, into different cultural settings or ecological conditions without advanced and careful evaluation. This might happen

especially to multinational firms and produce crisis situations for the affected organization right from the beginning.

f. Change in the Specific Environment

The specific environment of an organization includes all other organizations and individuals with which an organization is interacting. For a business organization this might include:

- State and local authorities
- Government agencies
- Congressmen
- Affiliated businesses
- Customers
- Competitors
- Business-related societies

For a military organization, this might include:

- Federal, state and local authorities
- Government agencies
- Police organizations
- Fire departments
- Civil defense organizations
- Allied armed forces
- Hostile armed forces

Changes in the behavior and power of competitors or hostile armed forces have the most potential for creating crisis in an organization. Changes in other inter-organizational relationships may also be responsible for a crisis, e.g., if an important customer goes bankrupt or if a strongly affiliated organization or individual gets involved in a scandal.

All the reasons discussed above, that may be responsible for the development of a crisis in an organization, are not clear-cut but are in steady interaction. In particular, all changes in an organization's general environment might have an influence on its specific environment.

2. Change of Factors Within the Organization

According to Leavitt's organizational model [Ref. 30, pp.1144-45], there are four looming organizational variables:

- Task
- Actors (people)
- Technology
- Structure

Because other variables are very important in dealing with crises, two more are added:

- Capital (= monetary resources)
- Supply of goods (e.g. raw materials, military supply)

For the following discussion in a - e about crises due to changes in organizational variables, the notion "task," as mentioned in Leavitt's model, will be replaced by "goal," which might be more often used by managers.

a. Change in Goals (or tasks)

Leavitt defines task briefly as "raison d'être" [Ref. 30, p. 1144]. Goals may include objectives which may change without necessarily changing the overall aim.

A rapid change of goals might impose changes in the composition of the labor force, in technology and also

in the organization's structure. The entire organization might then be involved in changes. The resulting problems for management may become so severe that the crisis criteria are met. Examples:

> A manufacturer of handcrafted period furniture who, due to wartime, is forced to produce wooden cases in large numbers, will experience major changes in his entire business and very probably face critical moments.
>
> A military unit, trained for combat missions, will have difficulties when it suddenly is engaged in riot control.

b. Change in Actors (people)

Crises in an organization which result especially from the people's behavior are in most cases due to conflicts between the actors. Conflicts may be created by problems in interpersonal relationships vertically in the line management chain or horizontally between peers, by job dissatisfaction or other unsatisfied needs.

Because a conflict is both a form of aggression and a frustration [Ref. 31 ,p.413], crises may occur because of aggressive actions of any kind: sabotage, arson, other acts of physical destruction and strikes, all aimed at the frustrating agent organization, or parts of it [Ref. 31, p. 404]. If frustration is created by outside factors, displaced aggression might still be aimed at the organization and lead to crises.

Another way to look at development of crises due to actors is based on the psychiatric "crisis theory" where

> Crisis is seen as a progressive phenomenon manifested by continuously rising tension due to the ineffectiveness of habitual problem-solving methods. This leads to feelings of helplessness, followed by emergency mobilization of resources. [Ref. 34, p. 369]

Due to changed behavioral patterns, this psychological disequilibrium of individuals and groups may then lead to crisis for the organization.

It is important to notice that the meaning of the expression "crisis," as it is used in "crisis theory," (and in the quotation above) differs from the one used throughout this thesis.

c. Change in Technology

How changes in technology affect an organization has already been described on page 17. It should be recognized that there is eventually a heavy influence of changes in technology on the other organizational variables. As a result of changes in technolcgy, goals, composition of the workforce and organizational structure might need to be changed, creating severe problems for the entire organization.

d. Change in Structure

Different organizational structures can have a heavy influence on the composition of the people within the organization, the needed skills, interpersonal relationships and power structures. People that are, for example, accustomed

to a vertically structured organization might not fit into a matrix organization. As Davis and Lawrence point out:

> It is inevitable, therefore, that a matrix organization creates some "dinosaurs" - individuals who may have been competent in a traditional organization but do not want or cannot function in a matrix. [Ref. 11, p. 113]

Inability of people to adapt to a different organizational structure may well lead to crisis.

e. Change in Capital or Supply of Goods

Change in this context means scarcity of capital or supply of goods (e.g. raw materials, spare parts, ammunition, fuel, food) or changes in the composition of the goods. Such changes can obviously create very serious crises which eventually can lead to complete collapse.

It is important to notice that changes in one of the above variables may influence other variables. Therefore, if a crisis is caused in an organization by internal factors it is doubtful that the variable which, at first glance, seems to be responsible for it, is really the one that caused it. The interactions must be studied in order to determine the real reasons.

Finally, it should be mentioned that the organizational variables may be changed by managerial decisions, mistakes and internal development. But in most cases, they change because of changes in the external environment. Hence, the interdependence looks like that presented in Figure 2. How crises can influence the environments (see lower darts), will be discussed later.

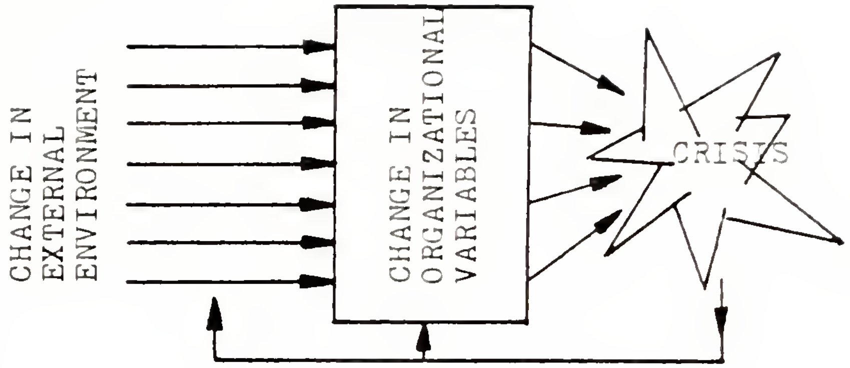

CHANGE IN EXTERNAL ENVIRONMENT
CHANGE IN ORGANIZATIONAL VARIABLES
CRISIS

Figure 2

The Interdependence Between External Environment, Organizational Variables and Crisis

The organizational changes leading to crisis are shown as having been affected by the external environment. The crisis, on the other hand, also may have an influence on the environment.

B. IMPACTS OF CRISES ON THE ORGANIZATION

In what ways are organizations, especially the crisis segments, affected by crises? This question will be answered by looking at the main organizational variables again: goals, actors, technology, structure, capital and supply goods.

1. Impacts on Goals

The possible impacts on goals are:

- obsolescence of goals in quantitative terms without changes in the qualitative aspects of the remaining ones,

- obsolescence of goals in qualitative terms without obsolescence in quantity,
- the combination of the two

The above impacts already show that decisions in terms of goals have to be made in crisis by a manager or leader.

2. Impacts on Installations, Equipment and Material

These impacts are generally of a physical nature and occur especially during wartime or disasters, for example, aircraft accidents, floods or nuclear accidents. Physical damage does not always need to be an effect of crises but can cause crises itself. It is difficult to draw a clear-cut boundary between these two. The same is true for physical impacts on people (see below).

3. Impacts on People

These impacts might be of physical, psychological, physiological or social nature.

a. Physical Impacts

Physical impacts on people occur especially in military units (losses, injuries) or at disasters in labor-intensive organizations. They will subsequently have psychological impacts and increase or cause crises. If, for example, the enemy attacks a military unit and throws it out of its positions, the crisis in the unit will be much worse if many soldiers are killed.

The physical impacts become a special aspect in decision making if they include leaders. Then, emergent leaders will take over the leaderless group without appointment [Ref. 13, p.6] or new leaders will be appointed. This might result in both more or less difficulties for handling the crisis situation, depending on the capabilities of the new leader and the communication patterns. Anyway, increased uncertainty will at the least exist over a limited time.

b. Psychological, Physiolcgical and Social Impacts

These impacts are very important as they determine how crisis situations get solved. In order to get a more detailed picture, four elements will be discussed:

- impacts on the leader or manager
- impacts on the staff
- impacts on the people in the crisis center
- impacts on the people in the internal environment

(1) Impacts on the Leader or Manager. Crises represent threat and danger on one side and, hopefully, challenge on the other side. They are a danger and threat to the leader or manager because of the great amount of uncertainty they create. On the other hand, a good leader or manager is challenged by the possibility to prove himself in fighting crises. What are the psychological effects of fear, anxiety and challenge on the leader or manager?

Lindzey et al. state that the emotional response to a specific perceived threat or danger is fear,

and that the transitory response to something unknown or indefinite in a specific situation is "state anxiety." They claim that two ways exist to control the spread of fear. One is to prevent the occurrence of the original fear stimulus. This prevention is obsolete if a crisis has already occurred. The other is to control fear by manipulating the consequences of it [Ref. 31, pp. 383-384]. Viewed in the crisis context, the relief promised by overcoming fear (and acting in a crisis situation) must be more important than the expected results of surrendering to it. State anxiety which results from uncertainty can have a positive effect in making reactions more effective but if it becomes excessive it may lead to a mental block [Ref. 31, pp. 384-385].

F. Panse, who did extensive studies on fear, anxiety and shock (Schreck) states that fear may cause limitations of perception and consciousness, very similar to Baelz's emotional paralysis (Baelz'sche Emotionslähmung). He describes this paralysis as an appropriate form of reaction, a basic instinct, which allows the individual to concentrate his attention and to act, though narrowly focused on the object of fear, with highest effectiveness. Another impact of fear is the alteration in the perception of time. [Ref. 37, pp. 90-96, 121-131]

McDougall mentions the following drives connected to fear:

- The drive to flee in order to protect oneself
- The drive to call (loudly) for help

- The drive to stay in a community or to seek one
- The drive to protect, to care
- The drive to dominate or maintain one's ground
- The drive to follow or to submit (quoted in Ref. 37, p. 103).

The physiological impacts of the stress created by anxiety and fear are very much interrelated with the psychological ones. H. Selye distinguishes three phases:

- Alarm reaction, causing, for example, pupil dilation, increased heart beat, excretion of wastes, increased galvanic skin response and increased activity of the adrenal glands
- Stage of resistance to stress, recovering from the alarm reaction
- Exhaustion (which is the exception) may occur due to continued reappearance of the symptoms of alarm reaction [Ref. 40, pp. 31-33, 113-127, and Ref. 31, p. 377]

An overwhelming drive to flee or mental block may be the worst effects of those discussed above which can happen to a leader or manager. Individuals in leading positions, who react this way, should be replaced immediately.

Challenge has quite the opposite effect. Why does it happen that some people get challenged as a result of threat?

There might be two reasons: First, threat by enemy, competition, or whatever creates a basic rage which turns into aggression as a possible basic reaction in order to survive, although , as Lindzey et al. state, survival might not depend on being aggressive [Ref. 31, p. 397]. Aggression might even lead to overreactions or misdirected reactions in crisis situations, endangering adequate and effective crisis management. Possibly, the best form of challenge is the emergence of a strong drive in the leader or manager to overcome the crisis, leaving him capable of objective judgment. This strong drive has a considerable impact on all people influenced by the leader or manager and is therefore extremely important, especially in situations which seem to be hopeless.

Crises have not only the inherent threat of uncertain outcome, but are also characterized by an overload of problems, and time constraints, hence, excess work. This work overload, together with fear and anxiety creates a real stress situation. Fiedler defines situational stress:

> We shall here define situational stress as a condition in the environment which is experienced as threatening and therefore as anxiety - and tension-arousing. [Ref. 12, p. 199]

Cribbin describes stress as follows:

> The common denominator of all stress and tension is a feeling of discomfort. .....Every human being has two basic desires: to maintain psychological equilibrium and harmony and to actualize his potential. Whenever one perceives any threat to these drives, he experiences a certain amount of stress. [Ref. 9, p. 200]

The disequilibrium mentioned above may range from hyperactivity to complete mental blocking. The good leader or manager will react somewhere in between. He will not be very sensitive to stress. Because it is assumed that the manager or leader has to cope with temporary crises only (as oppossed to permanent), the long term impacts of chronic stress will not be discussed here.

Another eventual impact on the leader or manager, as a result of the above impacts, is a possible change in his normal managerial behavior. This might derive from his own uncertainty and result in leaving subconsciously more authority to the subordinates, becoming more democratic, that is trying (also subsconsciously) to divide responsibility, or becoming more autocratic.

That the behavior of leaders can change from situation to situation is supported by Fiedler and Chemers:

> .....there is considerable evidence that the behavior of leaders changes from situation to situation. The leader who may be quite employee-centered and considerate in situations in which he feels in complete control tends to become concerned with the task in situations in which his control of the group is minimal. [Ref. 13, p. 54]

(2) Impacts on the Staff. What has been said for the leader or manager in (1) is also basically true for the members of the staff. There is one major difference: staff members do not have a direct responsibility. Evidently this takes some pressure off of them.

Because a staff is composed of many people with different personalities, the impacts of crises on a

staff as a small organization may vary enormously. For the leader or manager it is therefore important to know how his staff reacts in crises and especially the individuals having special capabilities to work effectively in such situations. If the leader or manager ignores the fact that the staff's power structure can change in crisis situations, he might become very disappointed and shaky.

The above mentioned drive to follow or to submit will be an important factor in facilitating leadership, because people are more willing to accept orders and directions than is commonly supposed.

(3) Impacts on the People in the Crisis Center. Leaders and their staff in the center of crisis will suffer the same impacts as described in (1) and (2), although they may be more severe and lead to complete inability of action. Where no appointed leaders exist any more or where they have lost their authority, power structures will change and emergent leaders take over.

These extreme cases of crises occur especially in wartime situations where physical, psychological and social impacts are combined to an extreme degree. K. Lang provides a vivid description:

> The disruption of combat units under fire is partly the result of physical damage and medical incapacity suffered in an unexpected emergency, both of which can be "repaired." Other stresses on combat personnel are cumulative. Men are required to undergo, as part of their everyday activities, considerable physical discomfort and other (for example, sexual) deprivations. They suffer great uncertainty. In particular, they constantly face the prospect of being killed or seriously injured and witness death

> and injury to others. A continuous crisis produces attrition and the effects of attrition must be distinguished from those of a nonroutine emergency. The effectiveness of combat units is impaired long before a point of irreparable physical annihilation is reached. [Ref. 28, pp. 863-864]

In addition to that discussed above, two elements may become crucially important: shock and panic. In case of shock, dimming and change of consciousness seem to happen relatively often. These shock effects can last for hours or days. Studies of effects on people due to earthquakes have shown that a primary immobilization may be followed by extreme motion (Bewegungssturm). The physiological impacts are basically the same as caused by fear, but they start more suddenly and their effects are more intensive. Especially observed were all kinds of muscular contractions.

Panic develops in the beginning only in weak and psychasthenic individuals who show a low resistance level but may then suddenly and unforseeably spread, involving people who before were thoughtful. [Ref. 37, pp. 117-120, 151-154, 158]

(4) Impacts on the People in the Internal Environment. If a part of the organization is in a crisis situation, the psychological impact could take different shapes. The overall attitude of the internal environment might best be described by the question: "Will we be affected too? If yes, in which way and when?" These basic questions already indicate one element of crisis: uncertainty, which can create anxiety and therefore have the same impacts as

were discussed before. The additional fact of being in a waiting position might even be worse because there is no relief from the activity of fighting against an actual "enemy" (= crisis). If leadership or management is functioning normally, preventive measures should emerge out of this situation and lead to a tightening of the organizational structure of the internal environment or just have the opposite effect if leadership is weak and vacillating.

Another possible psychological impact is the creation of willingness to help people in crisis. This willingness to help does not only bring relief to the helpee, but also to the helper because a goal-directed activity reduces tension and fear [Ref. 37, p. 5].

4. Impacts on Decision-Making Processes Due to Organizational Structures

a. Tall Versus Flat Structures

The pyramidal shape of an organization is determined by the existing span of control or span of authority. The span of control or authority can be defined as the number of subordinates an executive permits to report to him directly [Ref. 2, p. 1·44]. Ivancevich et al. describe tall and flat as follows:

> The larger the average span of control, the wider or flatter is the organization, and the smaller the average span of control, the narrower or taller is the organization. [Ref. 22, p. 349]

Figure 3 shows an example of each.

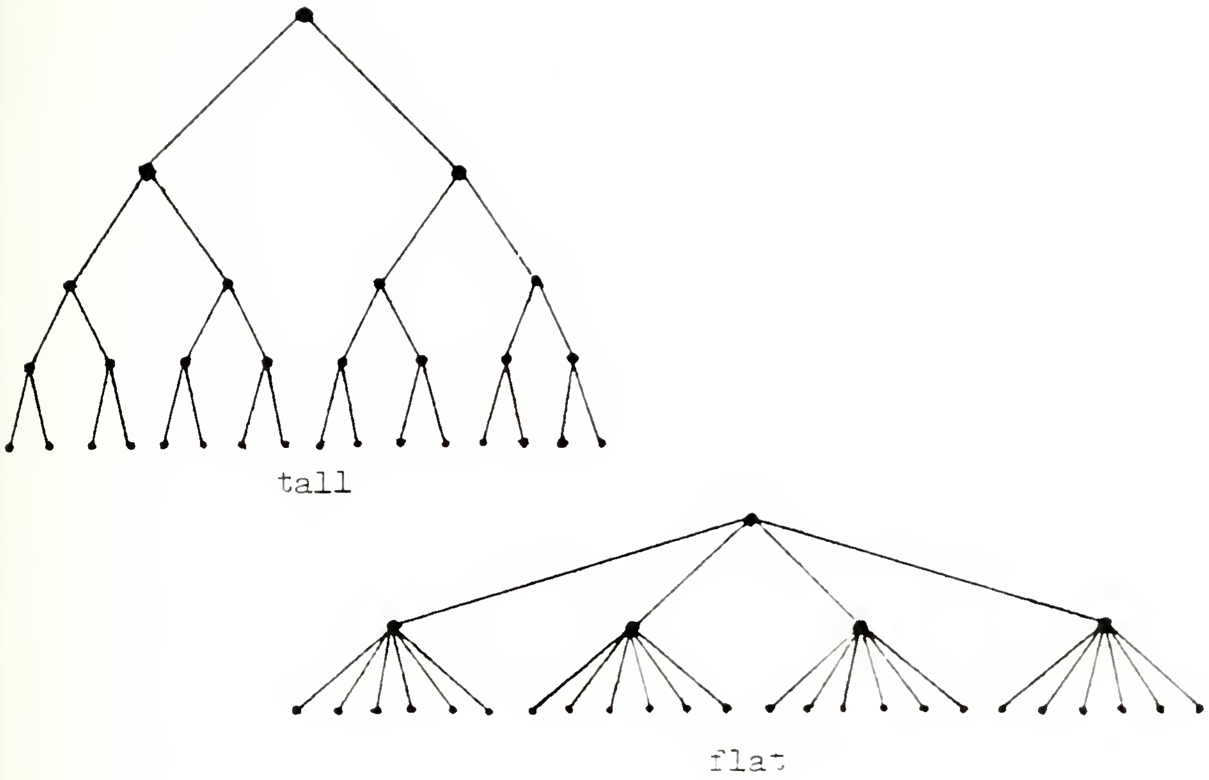


Figure 3

Tall Versus Flat Organizational Structures

In a tall structure, top management gets involved earlier in crisis decision making, but is able to shift resources faster due to the shorter line of command.

In the tall structure, the line of command

> is measured by the number of "communication centers" (black points in Figure 3, remark of author) through which the directives of the chief executive pass in being transmitted to the working level of the base of the pyramid. [Ref. 2, p. 1·45]

Crises may have different effects on tall and flat organizations. Because of the fewer management levels, the top management of a flat shaped organization will become involved much faster in the crisis management than the one

of a tall organization, which in this aspect has a more stable structure. On the other hand, a flat organization, due to shorter and therefore normally faster and better communication from the bottom to the top, can react in shorter time than a tall one, allowing for a much faster shift of resources to the center of the crisis. In a tall organization, as a result of the numerous communication centers, the risk is high that information may be delayed, distorted or even lost.

b. Functional Versus Divisionalized Structures

Large organizations in particular, consist of a mixture of both structures. Divisionalization generally goes along with the delegation of authority, hence, divisions are to a great degree able to make their own decisions. In a functional structure, decisions generally affect all or several departments. Therefore, the decisions have to be made at a level which has the possibility and the power to coordinate the involved departments. This may be at a relatively high level. A crisis therefore affects a divisionalized structure probably only within one division without necessarily involving top management. In a purely functional structure, on the other hand, even if a crisis occurs that affects a relatively small part of the business, it is top management which has to make the decisions. This has the advantage that all available resources of a firm can be engaged, if necessary, and the decision certainly

conforms to the ideas and policies of top management. That may not be the case if decisions are made at divisional level.

c. Highly Formalized Versus Less Formal Structures

Hage and Aiken state that "organizations with routine work are more likely to have greater formalization of organizational roles." [Ref. 17, p. 371] The extreme type of formalization is the "Ideal Bureaucracy," as described by Weber [Ref. 48], where jobs are highly routinized and executed following specific rules. It is obvious that such highly formalized organizations are too inflexible to cope with crises, which by nature cannot be handled entirely by formalized procedures. Lawrence and Lorsch checked the relationship between organizational formalization and environment and found that the more certain the environment is, the higher the formalization. [Ref. 29, pp. 31-31] It can therefore be concluded that a less formalized organization is more able to cope with a turbulent environment, hence, with crises. In other words: the impacts of crises on a less formalized organization will not be as severe as on a highly formalized one.

d. Pure Hierarchical Versus Matrix Structures

Davis and Lawrence [Ref. 11, pp. 11-18] propose that a matrix is the preferred organizational structure if three conditions are met simultaneously:

- Outside pressure for dual focus
  (e.g. project-oriented and science-
  oriented focus)

- Pressures for high information-processing capacity
- Pressures for shared resources

These three conditions look similar to those expected in a crisis.

Again Davis and Lawrence:

> The matrix design, properly applied, tends to develop more people who think and act in a general management mode. [Ref. 11, p. 17].

If this is true, matrix organizations might have some advantages in handling crises over the pure hierarchial structure which may not be as flexible. As will be pointed out later, flexibility, high information-processing capactiy, and individuals with a general view of the organization are crucial in resolving crises.

Matrix organizations also have their disadvantages. The fact that individuals in a matrix organization have more than one superior, creates problems. The power between superiors has to be brought to a reasonable balance which sometimes is very difficult. Even if this balance is established, it can change rapidly and is therefore highly unstable. Ivancevich et al. describe the situation vividly:

> The participants are also faced with somewhat of a dilemma. They may be responsible to both the functional and program managers. This type of in-the-middle position can create anxiety, stress and frustration. Some people handle this dual responsibility well, but others become very ineffective and confused. [Ref. 22, p. 367].

In conclusion, a matrix structure may be suitable to cope with crises, given that the people involved are capable of

handling this kind of structure. Otherwise there already exists an organizational crisis or at least a human problem. Additional difficulties produced by the crisis could lead to a collapse.

After this discussion of impacts on decision making due to organizational structures, the question arises: "Can crises have a direct influence on the organizational structure?" This question is not easy to answer. In most cases, organizational structures will be changed by managerial action in order to adapt to the special circumstances. On the other hand, it is certainly possible that structures can change as a result of shifts in power resulting from loss of leaders and the upcoming of emergent leaders, or breakdowns in the communication system. Hence, it can be said that the impact of crises on an organizational structure is of an indirect nature.

C. IMPACTS OF CRISES ON THE EXTERNAL ENVIRONMENT

Of all the environmental factors listed below,

- Technological conditions
- Legal conditions
- Political conditions
- Economic conditions
- Demographic conditions
- Ecological conditions
- Cultural conditions

most may be influenced by crises, especially if crises are perceived as disasters. The majority of these impacts have long-term characteristics. For example, technology might be improved after the explosion of a grain storage tank on a farm, legal measures might be taken after a disaster in a nuclear power plant, economic conditions might change after a crisis at the stock exchange.

Political, demographic, ecological and cultural conditions generally will only change as a result of great crises such as wars.

The possible impacts on the external environment should normally be considered in crisis decision making at very high levels only, where long-term impacts become important.

D. THE COMMUNICATION PROBLEM

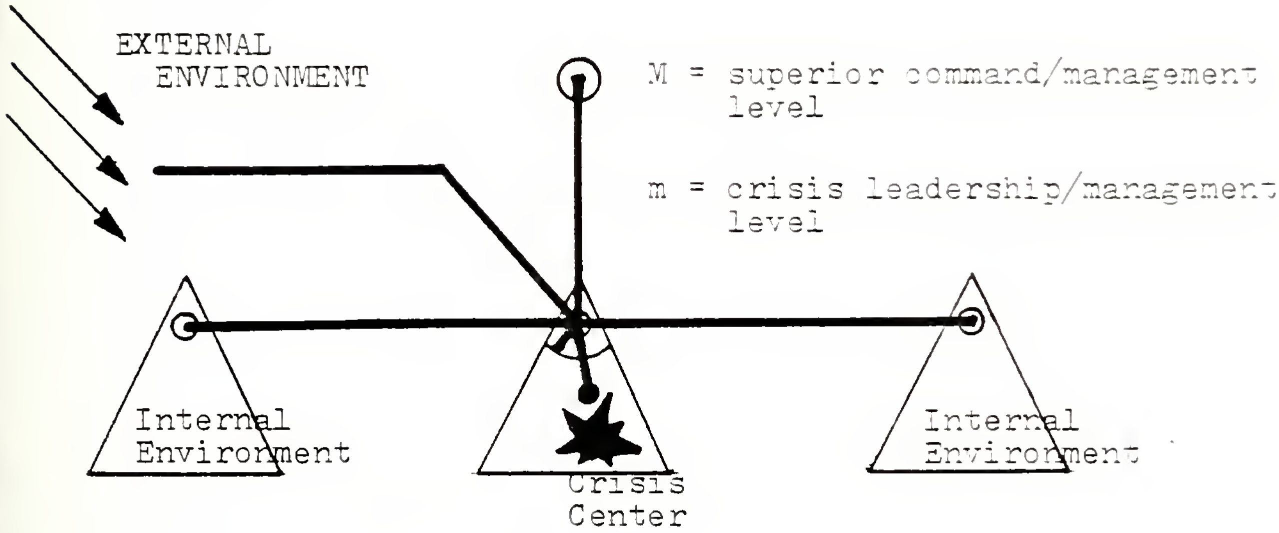

EXTERNAL ENVIRONMENT
M = superior command/management level
m = crisis leadership/management level
Internal Environment
Crisis Center
Internal Environment

Figure 4

Communication Channels

Five communication channels are especially important for decision making in crisis.

Five communication channels are especially relevant to decision making in crises (Figure 4).

They are:

- Communication between crisis center and the level of leadership or management which is still able to make decisions and has shiftable resources (m in Figure 4).
- Communication between the internal environment and the crisis leadership or management level m.
- Communication between the external environment and the leadership or management level m.
- Communication between the leadership or management level m and its superior level M.
- Internal communications between the leader or manager and his staff and between the members of the staff.

Communication is the exchange of information. To make appropriate decisions, relevant information is necessary.

A. Toan Jr. lists and describes the following criteria for good information:

- Significance and vitality
- Reliability
- Timeliness
- Understandability
- Bases for comparing current results

[Ref. 44, pp. 6-11].

In reality, the above criteria are goals which are seldom entirely met. Information is too often biased.

Even in a normally functioning organization the information flow is biased due to several facts. First, the range and quality of perception of the individuals participating in a communication process differ because of the different quality of sense organs and limited perceptual channel capacity [Ref. 31, p. 90]. Second, the communication process of different individuals will vary considerably, depending on factors such as:

- Personality of the partners involved in a communication process. Assuming that human action is heavily influenced by the drive to satisfy needs, people will follow this drive also while communicating. For example a person whose basic need is harm avoidance (one of Murray's Twenty Basic Needs, Ref. 36, pp. 151-225) will tend to suppress forwarding information that could in return create negative effects. Or if a superior has an aggressive personality, which creates fear in his subordinates, he sets up a major barrier to the transfer of knowledge and risks missing important information.
- Trust or mistrust between communicating partners. Mistrust is one of the most severe barriers to communication between individuals and can have substantial impacts on the kind of information forwarded and the way it is done.

- Misuse of knowledge as a tool of power. Withholding information in order not to lose personal power can mean that eventually vital knowledge does not get forwarded. This might be responsible for complete breakdowns of operations. A typical example is the electrician in a manufacturing plant who is the only one who knows about all of the changes that have been made over the years in the electrical system. If he is reluctant to properly record them, he becomes a V.I.P. because nobody else will ever be able to do anything meaningful in case of a power failure.
- Organizational barriers to communication. These include awkward communication procedures, technically poor communication means and geographical decentralization.
- Function of the individual in the organization. Some functions need more interaction to fulfill their job than others.

Third, different people will discriminate differently between important and unimportant information. Therefore the entire filtering process, which is crucial for the decision maker becomes biased.

In a normally operating organization, the biases will become apparent over time and automatically be corrected. For example a military leader knows that unit commander "A" tends to be too pessimistic and therefore gives reports

which describe the situation as worse than it is, while unit commander "B" is very tough and does not like to admit that he will be losing an important position. His reports, therefore, tend to be too optimistic.

In crises, the situation will very probably change. Due to the psychological impacts, people will eventually behave differently, affecting their way of communicating. In addition, especially in combat, institutional leaders may be killed and emergent leaders take over. Though they might be excellent, their way of handling information and communication toward the higher level of command is unknown right at the moment when the upper leadership level needs accurate information most. In conclusion, this means that the biases in communication during crises are different from the biases during normal operations and therefore represent an enormous problem in crisis decision making.

A typical example of the information problem is the discussion by Subcommittee Chairman Gary Hart and Pennsylvania Governor Dick Thornburg before a Senate panel following the Three Mile Island A-plant accident in 1979:

> Both Hart and Thornburg discussed confused and conflicting information of the accident. Thornburg sharply criticized the handling of the crisis by the Metropolitan Edison Co., the plant operator.
>
> "The company issued statements in the early days that proved to be something less than accurate and its credibility as a reliable source of information eroded rather quickly," the governor said. [Ref. 35, p. 3].

There is an additional aspect. Crises situations create an increased information flow. As a result, there are some dangers which can become very important:

- The danger of communication overload for leaders or managers because the participants in the communication system are not trained and accustomed to filtering the increased information flow effectively. Katz and Kahn state that:

  > Under time pressures the parts of the communication difficult to decode are neglected for the more easily assimilated parts, even though the former may be more critical for the organization. [Ref. 24, p. 453].

- The danger of delaying important information because no priorities are set.
- The danger of a complete blocking of the communication system, which in turn makes it impossible for leadership or management to perform tasks effectively.
- The danger of omissions, errors and distortions due to maladaptive behavior of involved people [Ref. 18, p. 190, Ref. 24, p. 452].

Hence, it should be clear that communications which are already of high importance under normal circumstances become an absolutely crucial factor in crisis.

IV. THE DECISION-MAKING PROCESS

A. THE DECISION-MAKING PROCESS UNDER NORMAL CIRCUMSTANCES

Different authors provide different decision-making procedures. Examples:

Scanlan proposes four essential phases:

- Analysis of the problem
- Developing alternative solutions
- Analyzing alternatives
- Implementing the course of action to be followed [Ref. 39, p. 114].

Basil develops a procedure which should especially fit the non-mathematical approach to decision making:

- Identification of the problem
- Coordination of the problem with previous plans and decisions
- Collection of factual information
- Determination of alternative courses of action
- Selection of one alternative (the decision)
- Formulation of a plan of action to implement the solution
- Design of controls and implementation of the decision
- Evaluation of the decision after its implementation [Ref. 6, p. 152].

Knudson, Woodworth and Bell present seven steps in decision making:

- Definition of the problem or opportunity
- Fact gathering
- Development of alternative solutions
- Weighing of alternative solutions
- Selection of the solution
- Implementation of the solution
- Measurement of the consequences
  [Ref. 26, p. 239].

All of the above decision-making procedures have important elements in common, even if their wording is different. The steps that can be identified throughout are:

- Identification of the problem
- Determination of alternative courses of action and their evaluation
- Selection of one alternative which is the decision
- Implementation of the decision which includes its later evaluation

In order to be able to relate the basic decision-making process better to the specific conditions in a crisis, the above sequence will be developed more in detail to ensure that important steps are not left out. Every step is discussed only briefly, assuming that a normal decision-making process is well known to the reader.

Normal decision-making process:

- Identification and analysis of the problem.

  What is the problem? What is its scope? How does it influence the variables of the organization? How will it probably develop over time?

  First conclusion*: ....

- Immediate countermeasures.

  Can something be done to save time or to reduce the most disagreeable crisis effects immediately, without anticipating the later decision?

- Analysis of the environmental influence on the problem.

  What influence does the external general environment have on the problem now and over time (technological, legal, political, economic, demographic, ecological or cultural conditions) and how can it be influenced?

  What influence can the external specific environment have on the problem now and in the future (organizations with which the one organization is in interaction, especially competitors, enemies, government agencies, related businesses or allied forces) and how can it be influenced?

  What influence can the internal environment have on the problem now and over time (e.g. other departments, divisions, military units) and how can it be influenced?

---

* It is important that conclusions are made which will facilitate the finding of alternative courses of action.

Second conclusion: ....

- Determination of the time frame which is available to solve the problems.

  This is a result of the preceding steps.

  Third conclusion: ....

- Determination of alternative courses of action.

  If the preceding steps were made carefully, the alternative solutions should be easy to find. It is important to list only a few (three to four), but really different and feasible courses of action. Each alternative has to be evaluated. Advantages, disadvantages and time frame must be pointed out and their impacts on all environments must be estimated.

- Selection of the best alternative as the solution to the problem.

  "Best" often describes the solution with the least disadvantages.

- Implementation of the solution.

  This includes the orders to subordinates, the provision of the necessary resources and the evaluation of the execution.

  It is worthwhile to give a second thought to how the orders can be given under the prevailing circumstances and to develop a concept for the relevant testing of the implementation.

The above decision-making procedures are intended to handle one problem at a time. If there are several problems, they should be solved in sequence by repeating the same procedure.

B. THE DECISION-MAKING PROCESS UNDER CRISIS CONDITIONS

The major characteristics and impacts of crises that are relevant to the decision-making process are listed below in the form of keywords. They represent a short summary of the discussions in earlier chapters and are the special factors that must be taken into consideration while making decisions in crises.

They are:

- Uncertain outcome with survival at risk
- Necessity for extraordinary resources
- Multiple simultaneous problems
- Severe time constraints
- Obsolescence of goals or objectives
- Destruction (people, installations, equipment, material)
- Stress (anxiety, fear, shock, panic, work overload)
- Change of power structures
- Change in communication and information

Obviously there are many cause and effect relationships and interactions between the above factors. In order to show how the decision maker must cope with these interacting problems, they will be grouped for the following discussion,

although it is obvious that they cannot be treated independently. The grouping is only done for structuring purposes.

1. Fear, Anxiety, Stress, Shock, Panic

The reduction of fear and state anxiety is one of the most important actions a leader or manager should take as a preliminary measure in decision making. Before taking any further steps, he must do everything to reestablish first his own psychological equilibrium which might have been distorted by the actual stress situation.

Figure 5 shows how J. J. Cribbin describes the adjustment procedure (adapted):

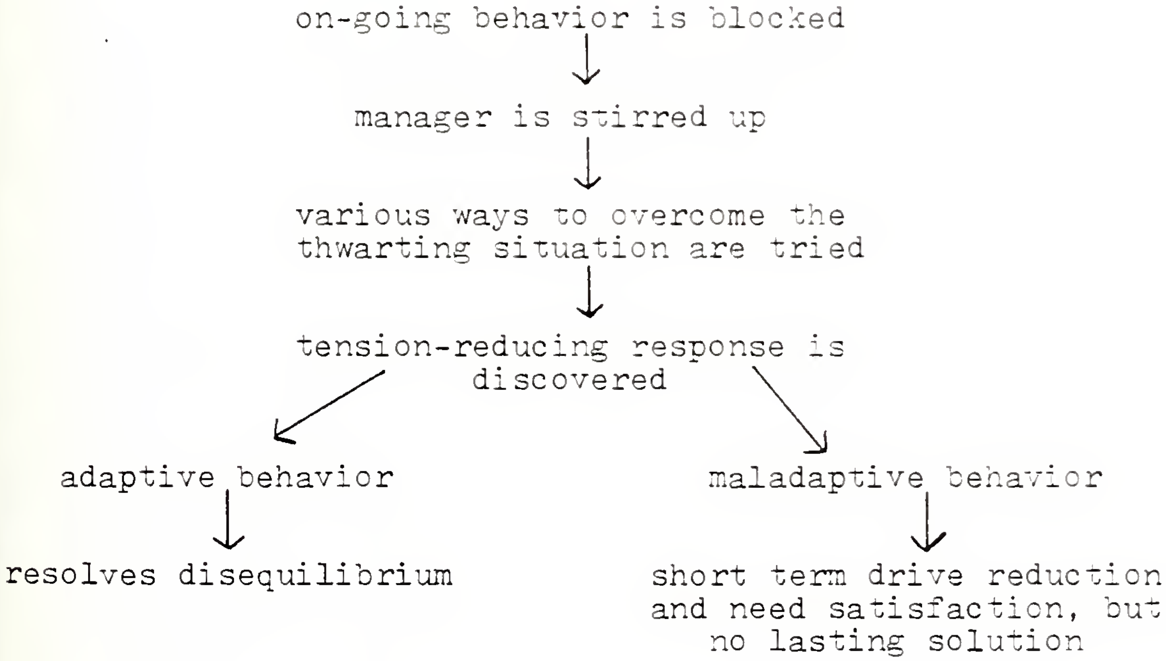

on-going behavior is blocked
manager is stirred up
various ways to overcome the thwarting situation are tried
tension-reducing response is discovered
adaptive behavior
maladaptive behavior
resolves disequilibrium
short term drive reduction and need satisfaction, but no lasting solution

Figure 5

Procedure for Adjustment to Stress as Proposed by J. J. Cribbin [Ref. 9, pp. 204-205].

The leader or manager of course wants to resolve his disequilibrium. Two questions arise. The first is: What are "various ways to overcome the thwarting situation?" Cribbin indicates that the scope ranges from "dogged effort based on logical experimentation to random illogical behavior or stereotyped repetition of ineffective actions." [Ref. 9, p. 204]. Depending on one's personality, different ways may lead to the regaining of equilibrium. Some people will find support in their religion, others in increased communication with superiors, peers or subordinates, others in distraction, some in mental exercises, as for example, comparing their actual problem to the billions of stars, the enormous distances and the incredible timeframes of the universe in order to become aware how very unimportant and tiny the actual problem is. In addition, more and more individuals are becoming aware of the different techniques which are available to reduce tensions, such as relaxation and meditation techniques. It is beyond the scope of this thesis to discuss tension-reducing medication. The second question is: What are the criteria for adaptive and maladaptive behavior?

Again Cribbin:

> Since adjustment entails the balanced satisfaction of needs, the manager must treat his difficulties as interrelated. If the solution found does not result in a higher degree of personal integration - and this is always relative - then one need or pattern of needs will be met at the expense of others equally important. [Ref. 9, p. 205].

As nonintegrating (maladaptive) adjustments, Cribbin describes measures that violate normal social standards. He mentions three major forms: recourse to aggression, withdrawal (from people or problems), and self-deception (to save face and maintain self-respect) [Ref. 9, p. 205].

Adaptive and maladaptive tension-reducing procedures will be repeated, because both give relief, although the one resulting from maladaptive behavior has short-term characteristics. It is therefore important to have leaders and managers who are adaptive, because they will be more effective in handling crisis situations. The experience of several successfully managed crises will in addition increase self-confidence and therefore reduce fear and anxiety right from the beginning.

Once the leader or manager has reestablished his psychological equilibrium to a level which allows him to act effectively, he must ensure that fear and anxiety are reduced within his subordinates, including the staff. If staff or crisis center should be of primary concern to him, depends on the situation. Because anxiety is a result of uncertainty, the latter should be reduced by good and quick information. Since the mood of the people involved in a crisis can deteriorate rapidly, if uncertainty prevails, the time factor in providing information is important. Both anxiety and fear, the emotional response to a specific, perceived threat, can be reduced by creating, or better maintaining confidence in leadership. Positive, earlier experiences with leaders or

managers will be a good platform for confidence. An extremely effective way to reduce fear, shock, and panic is the personal presence of the obviously "cool-looking" leader right in the crisis center.

The importance of a leader's personal presence and influence is stressed in an abundant amount of relevant literature. A typical example is described in Torrance's study about group behavior of Air Force personnel:

> In one crew, the navigator became panicky but looked up and saw the aircraft commander and the pilot were still in their seats doing their jobs and he became calm. [Ref. 45, p. 753].

This effect works in both ways, the positive and the negative. In an unstable psychological situation, the action of one individual can turn the whole situation into good or bad.

Panse too emphasizes the importance of the suggestive example given by strong leaders although he points out that their influence is limited to people who dispose of some minimum substance of personality (Persönlichkeitssubstanz), consistency of character and strength of will [Ref. 37, pp. 119-120].

Torrance found evidence for the importance of setting goals and clarifying structures to a group in crisis:

> Having a common goal is a force which helps to hold together in a survival emergency. [Ref. 45, p. 753].
>
> Survivor group behavior shows that relief and behavior of increased survival value results when the structure of the situation becomes clear. [Ref. 45, p. 752].

The findings are certainly applicable to a staff in crisis, but may, in essence, also be valid for larger groups.

Initiating activity is another effective means to reduce anxiety, fear, shock and panic. Being charged with duty absorbes attention and affect, hence, leaves less room for emotions [Ref. 37, p. 5].

In addition, the leader or manager must be aware that anxiety and fear, if repressed or treated as a trifle by the crisis-affected individuals, create a strong need to communicate about the suppressed feelings [Ref. 37, pp. 11-12]. He therefore should try to satisfy this need.

In most cases of crises the leader or manager must decide where his influence is more important in order to most effectively fight crisis, if it is either in the decision-making process with his staff or right in the center of the crisis. This decision depends mainly on the personality of the leader or manager on the one hand and the capabilities of the staff on the other. If the staff is led by a capable individual, who knows how to act in his master's spirit, the leader should go to the crisis center. Many leaders act this way but forget to establish an effective communication back to their headquarter, to inform the staff about decisions they made on the spot, in order to integrate them in the staff's planning, and to get continuously important information from the staff.

It may seem that the above discussion has not much to do with decision making. This certainly is not true. It is very difficult to implement a decision, even if it is an excellent one, if the subordinates are unable to execute it due to their disastrous psychological condition. Hence, it is absolutely necessary to first prepare a favorable base.

2. Multiple Simultaneous Problems and Time Constraints

If several problems arise at the same time, or in very short intervals, and there is no time constraint in solving them, they may be solved by normal decision-making procedures. It is the combination of multitude and time constraints which creates special organizational problems, besides the stress involved.

Two steps are especially important when one deals with such situations:

- Structuring the problems
- Creation of an adequate decision-making organization

a. Structuring the Problems

Structuring the problems involves the following steps: First, all problems should be ranked in their primary relative contribution to achieving the overall goals. The problems of a major production line are, for example, basically more important than the ones of a small line. Second, all problems should be evaluated for their impact on achieving the goals over time and ranked following time priorities. Third, the combined ranking of the problems must be made. In real

life it often is difficult to make the needed discriminations, because tradeoffs become necessary. Example: An infantry division has lost two key forward positions, previously held by a regiment, to the enemy. This means that the enemy is able to continue his attack on the rear regiments within the next few hours. At the same time the intelligence service reports that the two bridges, which are vitally important to the supply line, have been occupied by two enemy airborne companies. This is especially bad because the already delayed antitank-ammunition supply is urgently needed within the next six hours. In addition, a rear infantry battalion reports the outbreak of typhoid fever, with 30% of the battalion already affected.

Following step one, the ranking of problems would be:

1. Loss of regimental positions
   because it concerns primarily a
   combat regiment, hence a major unit
2. Typhoid fever
   because it concerns primarily a
   combat battalion, also a major factor
3. Antitank ammunition
   because it concerns the supply organization.

Step two reverses the order as follows:

1. Antitank ammunition
   because the severe time constraint
   affects the overall goals of the division

2. Loss of regimental positions

   because if no measures are taken in time, achievement of the overall goals might be endangered

3. Typhoid fever

   Although this problem could be _the_ major one in the long run, it isn't in the short term.

The combined ranking remains as it was after step two, due to the major importance of the time frame in this example.

And fourth, in structuring the problems, the interaction between the different problems must be determined. Some problems will have a lot of interaction with others, some will have less and some none. This step is especially important for organizing the further decision-making process.

Fifth, it should be determined if there are problems that can be discarded because they are relatively unimportant and the staff is unable to handle them without negative impact on the major problems.

Sixth, the remaining problems must be scanned for obsolescence, i.e., problems that cannot be solved due to lack of time or means. Spending resources on such problems must be avoided, even if this is hard to do (for details see page 68).

Appendix I provides a practical overview for the above discussed procedures.

If the problems are so complex that they cannot be structured without further investigation, a preliminary evaluation should be made involving the staff in an organization similar to one of those described in (1) or (2) below.

b. Creation of a Decision-Making Organization Or How to Organize the Staff

The goal of a special staff organization, established for decision making in crises, is to create favorable conditions for solving the multitude of problems in a short time.

There are two basic ways to attain this goal. Either the problems are solved in sequence, reducing the time for solving each problem to the lowest possible minimum or the problems are solved simultaneously.

(1) Staff Organization for Decision Making in Sequence. In order to make this type of decision making work, extremely high efficiency is necessary, because the time available to solve one problem gets very short. This can be done by chosing some very capable "generalists" who form a "nucleus." At the same time, all other staff members are organized in a pool of specialists where they remain at the disposal of the nucleus (Figure 6). This eliminates all the hazards of overstaffing, which wastes a lot of time. M. Folsom states:

> Generally, small groups of highly qualifed staff people seem to work out best.
>
> Over-staffing can be suspected when non pertinent information is frequently brought up, when issues often

> become confused, and when decisions are too often delayed - and particularly when all three symptoms exist at once. [Ref. 14, p. 23].

There are additional advantages to having a small number of "generalists" working on decisions:

- fewer coordination problems
- concentration on important factors, hence no "fine tuning" which is normally not important in crises.

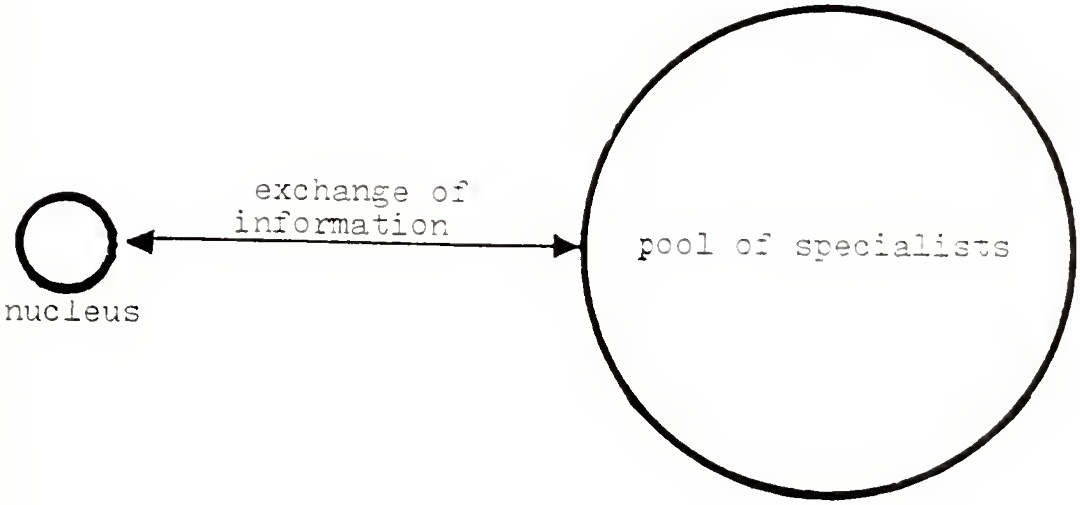


Figure 6

Staff Organization for Decision Making in Sequence

In order to speed-up the decision-making process, the acting staff is reduced to a few capable "generalists." All other staff members are pooled to provide special information, if necessary.

It is difficult to say how large the "nucleus" should be. Slater found five to be an ideal number [cited in Ref. 20, p.361]. Excellent "generalists," assisted by capable secretaries, can act very effectively.

The preceding system does have some major disadvantages:

- Important details which are known by the specialists can get lost and have unexpected impacts later. This can partially be eliminated if specialists are invited to give a very short comment on the final decision in the sense "ok" or "not ok."
- The staff members who are excluded from the nucleus get frustrated.
- Staff members who are known for their nonconforming opinions, are normally excluded from the nucleus in order to save time. Hence, the critical evaluation during the decision-making process is missing
- The information of the pool of specialists normally is neglected by the nucleus due to lack of time. Hence, if something happens to the small group, the rest of the staff will have a harder time taking over the functions.

(2) Staff Organization for Parallel Decision Making. The basic idea is delegation of additional authority to task forces within the staff, eventually including line people in order to be able to solve problems simultaneously and effectively.

W. Bass describes the task force concept to meet emergencies as follows:

> Business firms and government agencies resort often to task forces to respond to crises ... The stress of the

> emergency calls forth vigorous efforts from all sides, under the eye of the top management. Initiative and creative thinking are encouraged. Channels of communication are forced open among operating departments. The organization is operating as a whole instead of as a collection of isolated units. Necessity breaks down the barriers between cells of responsibility and expertise. [Ref. 7, p. 1].

Gruber and Niles have a similar basic idea about task forces:

> The creation of a task force should imply an effort to improve a serious problem situation or to realize the potential in an important opportunity, since task-force members have jobs in the regular organization structure. [Ref. 16, p. 179].

Some fundamental principles of authority delegation become even more important in crises:

- Relationship of trust between superiors and subordinates involved in the delegation
- Clear policies which provide the framework for decision making at every level

  > The principal task of policies is to give consistency to decisions while still allowing different decisions on different sets of facts to be made. Policies thus furnish the framework for plans. There is consequently a close relationship between policies and delegation of authority. [Ref. 2, p. 1·49].

- Ability of the recipients of authority to overview not only their specific problem but also its interactions with other ones

Although

> an orderly process of authority delegation always assumes that authority, responsibility and accountability are coextensive and inseparable [Ref. 2, p. 1·41],

this principle often must be violated, because a leader or manager sometimes cannot delegate responsibility and

accountability in crises but has to delegate authority alone. Since this represents a major risk to him, the before-mentioned trust factor is so highly important - trust based on integrity, loyalty, and capability of the subordinates.

Obviously, the personality of the leader or manager becomes very important and so does his leadership style. It is beyond the scope of this thesis to discuss leadership styles extensively, but it can be safely stated, that the extreme authoritarian style and "laissez-faire" leadership are not compatible with effective delegation of authority. Argyris showed that the latter creates more tension and anxiety than does _either_ democratic or autocratic [Ref. 4, p. 192]. Organizations built around an authoritarian leader on the other hand have inherent weaknesses:

> An authoritarian leader is quite likely to find, for one thing, that his followers have deserted him in a critical moment. He can hold around him only those of uncritical minds and dependent personalities ...
>
> When that one man goes, the entire organization is likely to collapse, for such a leader has not allowed others to develop enough to replace him and to keep the organization's executive resources strong. [Ref. 33, p. 496].

The _organizational procedure_ of delegation is based on the results of the problem structuring process which is described in Appendix I. The latter makes clear which are the problems to deal with, their ranking and interdependence.

Problems with no interaction can be solved independently by a staff task force or by line people.

Problems which are interrelated with other problems require a coordinated effort by the leader/manager, chief of staff or a special coordination task force.

The task forces should be composed of at least one "generalist" and the necessary specialists in order to solve the problems effectively.

Sometimes there are not enough competent specialists to satisfy each task force. This might be the case with financial experts, computer specialists or communication specialists. If these specialists have to make contributions to several task forces, they should be put into a pool of specialists. Special attention has to be paid to members of such pools in order to keep their knowledge up to date and to make sure that they do not confuse the different problems, but keep them well separated in their minds.

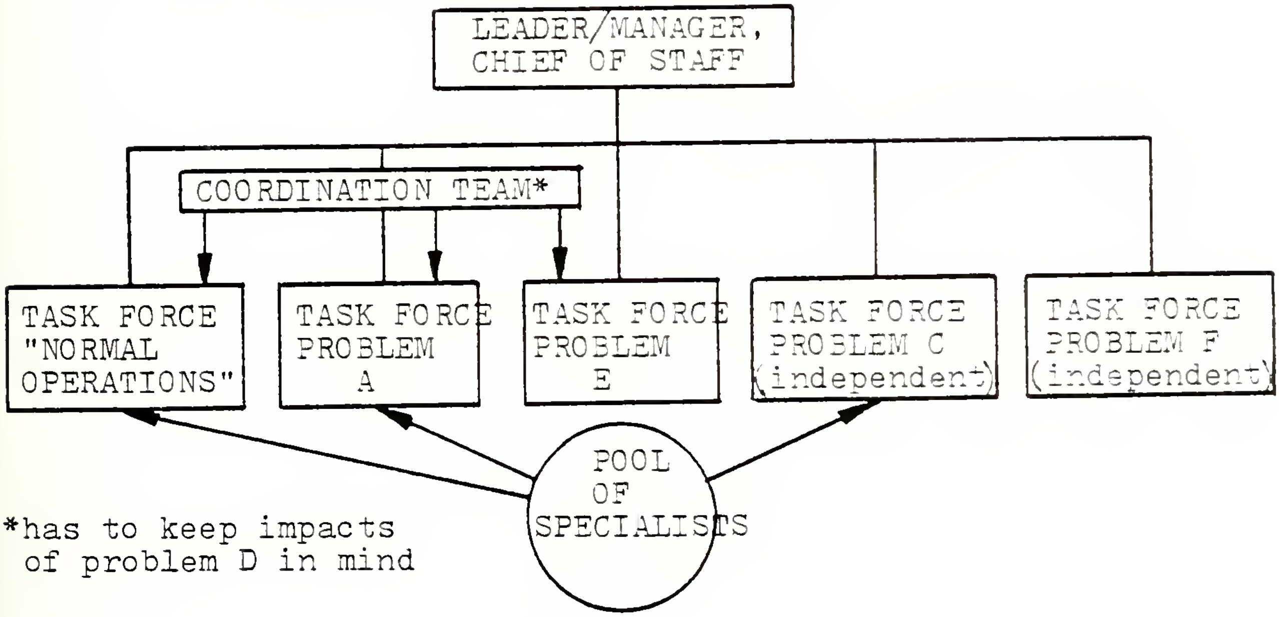
Figure 7 shows relevant parts of the organizational structure for parallel decision making, based on step 6 of Appendix I.

In spite of the incorporation into task forces, staff members should continue to help the line, because

> staff departments are supposed to assist line departments in work that requires technical expertise and detailed attention. [Ref. 19, p. 112].

In conclusion, task forces might work under four kinds of conditions:

- Task forces which can solve problems independently and do not require assistance from an information pool (problem F in Figure 7)
- Task forces which can solve problems independently but need information from the pool of specialists (problem C in Figure 7)
- Task forces which solve problems that need coordination but do not need to use the pool of specialists (problem E in Figure 7)
- Task forces which solve problems that need coordination and require inputs from the pool of specialists (problem A and "normal operations" in Figure 7)


LEADER/MANAGER, CHIEF OF STAFF
COORDINATION TEAM*
TASK FORCE "NORMAL OPERATIONS"
TASK FORCE PROBLEM A
TASK FORCE PROBLEM E
TASK FORCE PROBLEM C (independent)
TASK FORCE PROBLEM F (independent)
POOL OF SPECIALISTS

*has to keep impacts of problem D in mind

Figure 7

Relevant Parts of the Organizational Structure for Parallel Decision Making (Compare Appendix I)

Task forces attack the different problems. Where necessary, coordination is imposed and knowledge of specialists is provided. Problem B is dropped because it is of minor importance; problem D is obsolete, hence also discarded, but still affects problems A, E, and the "normal operations."

It is obvious that problems which can be treated the first way are the ones that might best be delegated down the line.

The chief of staff (or leader, manager) who has organized his staff into task forces must now give clear orders to the task forces and clearly define the range of authority, responsibility and accountability he delegates and which decisions he wants to make by himself. If the delegated authority involves the power to give orders to subordinate levels, these levels must be informed.

If the delegation is done, the responsible chief of staff (leader, manager) has to reorganize his own activity following the new organization. From the viewpoint of primary importance and time, the highest-ranking problems need his attention most. From the organizational viewpoint, the task forces that deal with problems that need coordination and rely on the pool of specialists require the most control. Hence, trade-offs have to be made.

Parallel problem solving by delegation normally involves most members of the staff, and eventually also some individuals from the line, and allows all of them to contribute in solving the crisis. It is, therefore, a much more satisfying procedure from the human resources viewpoint than the one described in (1).

The decision-making procedures within the task forces follow normal rules, as described in IV.A (pages 47-51), except that there is eventually a more pronounced lack of information than usual.

3. Additional Resources, Obsolescence and Time Constraints

Measures aimed at coping with crises often require substantial amounts of additional resources. On the other hand, due to the prevailing uncertainty, benefits are difficult to estimate and can decrease rapidly if timely crisis countermeasures are not taken. It is, therefore, extremely important that a cost/benefit analysis for a relevant future period is made for each planned measure. If the measures cannot be effective before the point of obsolescence, or the costs are higher than expected benefits, the measure should be dropped in order to save resources (Figure 8). So-called "alibi actions" which are taken, even if they make no sense, in order to show that at least some attempt has been made to solve a problem, are a waste of time and resources.

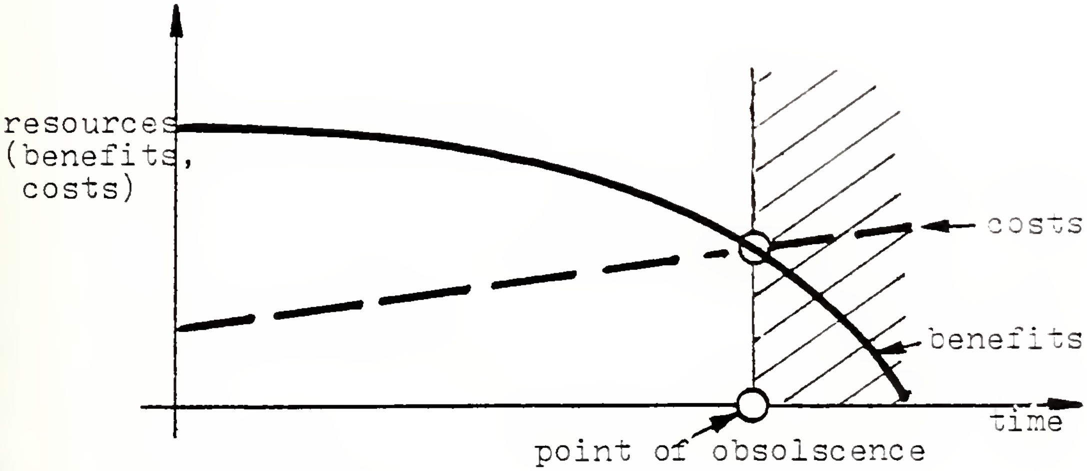


Figure 8

The Problem of Obsolescence

It should be determined if the effects of applied resources will take place early enough to exceed costs.

Example:

If a grounded supertanker is expected to burst within the next 4 hours and it takes 30 hours to pump the oil out of it, all pumping measures are a waste of time, labor and capital. Hence, the specific solving of such problems must be discarded, without neglecting their interactions with other problems.

The psychological impacts in crises, together with changed procedures may have a "wasting effect" on some people. Resources are wasted due to the opinion "our losses are so huge and the situation so hopeless anyway, that it really does not matter if double the needed explosives are used to do the job." The other extreme is the stupid bureaucrat who, while fire spreads, wants a receipt before handing out a fire extinguisher to an employee of another department. Two measures are important in fighting the "wasting effect." First, leaders or managers in crises must clearly define which normal procedures are changed and, second, managerial control must be tighter than in normal times.

On the other hand, special allowances must be made because the additional necessary resources normally cannot be spent in an optimal way due to the lack of fine-tuned planning. There certainly exist situations where the application of too few resources has the inherent risk of total failure. Hence, when in doubt: be massive, not meager.

4. Communication and Information

Everything must be done to get accurate information in order to be able to make appropriate decisions. Hence, measures must be taken to fight lack of information, extreme bias of information and excess information.

In some crisis situations it is of vital importance that information is procured fast and aggressively. This is the case when there is some evidence that important facts could get lost or be intentionally destroyed. If, for example, a business gets into troubles due to illegal actions of a subsidiary, immediate actions must be taken to avoid destruction of incriminating documents and the disappearance of involved people.

If the information and communication center is unable to handle the information overload, it might be worthwhile to delegate a "generalist" in order to assure effective filtering.

Because people in crises are often unable to act as objective information sources, it may be necessary to establish a special information service, consisting of teams sent out to the crisis center (see also 5.c on page 77). If this is not possible, for time reasons or other, it may be necessary to make decisions under conditions of high uncertainty.

> Yet the pitfalls of problem analysis and decision making are almost certain to increase whenever a manager is under pressure ... It is precisely at this time, when people are clamoring for action, when he doesn't have all the important information he thinks he needs ... The good manager, like a skilled detective, will spot the relevant information and use it, point by point,

> to narrow down the search for the real culprit. [Ref. 25, pp. 24-25].

Some mathematical models, which deal with decision making under risk, uncertainty and conflict, may be applicable (depending on the time frame), and give the decision maker valuable help.

Examples:

- Decision matrices
- Decision trees
- PERT
- Dynamic programming
- Markov chains
- Game theory
- Simulation

[Ref. 47, p. 48].

Methods which use estimates developed by experts may also be helpful. The best known procedure probably is the Delphi Method [Ref. 32, Ref. 10].

To avoid new biases in communications due to personalities, the following recommendations should be accepted:

First, the adoption of a new staff organization should not create new internal communications. This means that the heads of task forces should have collaborated with the chief of staff (leader, manager) before, and that the members of the task forces should have worked together in advance. The creation of special "disaster staffs," composed of people who normally do not work together, is therefore problematic unless these staffs get frequent training.

Second, communications between crisis command or management and the crisis center must be examined so that biases due to impacts on the people who are directly affected by the crisis (physical damage, psychological impacts) can be dealt with effectively. If there is some reason to believe that things have changed, "emergency command or management teams," composed of competent staff members should be sent to the crisis center in order to establish reliable communications. This helps not only in transmitting information both ways but also in implementing decisions (see also 5.c on page 77).

A special problem is the staff's internal updating of information in order to avoid having work done that is based on obsolete information. As things change quickly in crises, an effort must be made to spread information rapidly. This can be done best by organizing frequent staff meetings and/or frequent updating of data bases.

A very dangerous aspect is described by M. Folsom:

> There is also a tendency by some staff men to shield their bosses from unpleasant news and contacts. Such protection can often go too far and prevent the executive from gaining pertinent information or learning of alternative points of view. [Ref. 14, p. 25].

The same situation occurs when the authoritarian or aggressive personality of a leader or manager creates fear within his subordinates of passing information upward.

Crisis situations often become worse due to the lack of controlled information flow to the mass media. This is especially true for public administrations or big businesses

that are always observed with scepticism by the public. Fast and accurate information by management can avoid unpleasant rumors. Withholding information or providing intentionally false information does not normally pay off, because mistrust and unfavorable public opinion is created when it becomes obvious that false information was delivered. Hence, good public relations are an important part of crisis management.

In all these information and communication problems involved in crises, the protection of information against undesired dissemination becomes an important aspect. It is, therefore, necessary to implement security measures for staff people and to take steps against the tapping of communication systems in advance because there is probably no time to do it once a crisis has developed.

5. Other Aspects, resulting from several factors

a. Lack of Critical Evaluation

Many leaders and managers, especially authoritarian ones, do not like people in their staff who express different points of view or have different approaches to problems. Enormous pressure on staff members for conformity with the "group opinion," or the leader's opinion, may exist.

> As the individual acts in interpersonal behavior events, in face-to-face contact with the other group members, he is often placed under group pressure to conform - to judge, believe, act in agreement with the judgment, belief and action of the group. [Ref. 27, p. 505].

Especially under conditions of time constraint, people who resist conformity, risk being excluded from decision making

in order to avoid conflict and to save time. Individuals with a critical attitude are often not included when new staff members are selected. Pressure for conformity and elimination of non-conforming opposition leads to the extremely dangerous situation of "groupthink," as described by I. L. Janis. He mentions the following symptoms of "groupthink:"

- Illusion of invulnerability which leads to over-optimism, the willingness to take extraordinary risks, and failure to respond to warnings
- Collective construction of rationalizations in order to discount warnings and other forms of negative feedback
- Belief in the inherent morality of the ingroup which leads to ignorance of ethical and moral consequences of decisions
- Stereotyped views of the leaders of the enemy groups, for example, they are stupid or evil, hence, the failure to get a realistic, sophisticated picture
- Pressure on members who support other opinions than those of the majority
- Self-censorship by avoiding deviation from apparent group consensus
- Mindguarding in order to protect the leader and the fellow members from adverse information [Ref. 23, pp. 44-46, 74-75].

It is obvious that poor decision making is the result of groupthink. Hence, an effort has to be made to allow critical evaluation to take place, even if there are time constraints. Asch found experimental evidence that the presence of a partner supporting a dissident depleted the group's majority of much of its power. In addition, he concluded that the dissent _per se_ increased independence. [Ref. 5, p. 34]

The effective leader or manager should therefore tolerate _more than one_ individual in his staff who is known to have independent viewpoints, in order to increase the individual's ability to resist pressure for conformity. He may also encourage them to express their opinion, because

> it (Asch's finding, the author) suggests, for example, that a dissident opinion, if expressed loudly and clearly, can have a tremendous effect in strengthening the independence of like-minded people. The expression of a dissident opinion may not _change_ the majority's beliefs, but it can conserve the minority view. [Ref. 24, pp. 514-515]

In addition, the following remedies may help to prevent groupthink:

- Assignment of the role of a critical evaluator to each group member
- Assignment of the role of a devil's advocate to at least one group member
- Avoidance of statements about preferences and expectations by the leader before the decisions are made
- Outside groups working on the same issue under different leaders

- Discussion of the group's deliberations with outside members of the organization, if time and security permits this
- Eventual involvement of outside experts, if conditions allow it
- Division into subgroups after preliminary consensus, reevaluation of the solutions, then group meeting to discuss residual doubts

The above recommendations are adapted from Janis [Ref. 23, p.76].

b. Delegation of Authority to Management Levels Down the Line

In general, it is advisable to delegate as much authority as possible to line people who are in the crisis center and therefore have the best knowledge of the facts. This delegation of authority can include subordination of additional resources. Several conditions must be fulfilled to make such delegations.

First, the command or management level in question must be able to act in spite of the on-going crisis.

Second, it must have no responsibility for the occurance of the crisis, otherwise it might spend resources on eliminating facts that could be used as evidence in later investigations. This is especially important when criminal acts are the reason for crises. In this case, the involved management level should immediately be isolated and replaced.

c. Emergency Command or Management Teams

If lower leadership or management levels are unable to fulfill their function because of crisis impacts, emergency command or management teams must take over the responsibilities. These teams should be composed of flexible, capable people who are able to grasp the problems quickly, establish the necessary contacts, gather the important information and make decisions. They must get the necessary authority and resources to act as independently and effectively as possible. Finally, they must generate efficient vertical and horizontal communications.

d. Resistance to Change

As with other people in organizations, staff people have the tendency to do what they have always done. It is certainly a pitfall to expect flexibility in crisis situations when there was none before.

> Role performance becomes so firmly habituated and closely prescribed by expectations relating to function and status that the members are unable to act freely in coping with the changing situational demands made upon the group. [Ref. 41, p. 133]

Nevertheless, there may be some members of the staff who are able to respond to the changed procedure patterns of a crisis. In highly formalized organizations, which operate in stable environments, one probably should look for frustrated people, planning to leave soon because they cannot develop their dynamic personality. Organizations that are used to operating in turbulent environments will have less difficulties in providing flexible people.

It is clear then that executives should find out early which members of their staff are capable of adapting to changing situations. However, it is best not to change established procedures in crises without obvious necessity.

e. Help From Outside

Depending on the character of a crisis and the reasons for its development, willingness to help can be expected from the internal and external environment. Crisis leadership or management must include these potential resources in their decision making and coordinate them with their own resources.

f. Power Struggling

People who are known for their reckless egoistic power struggling should be eliminated from decision making in crises because they lessen the efficiency of the process.

g. Collective Leadership

If the leadership or management involved in a crisis is a collective one, meaning it consists of several persons with equal power, including the chairman who is only "primus inter pares," the following things may happen:

- The individuals with "strong" personalities may emerge and take over authoritarian leadership
- The collective leadership or management may be willing to take higher risks than an individual, as shown by J. Stoner [cited in Ref. 38, p. 385]
- The decision may almost certainly be delayed. This is due to set-up time, start-up time, and disucssion time

[Ref. 38, page 395]. The quality of the decision may be better than the decision made by a single individual, but this is uncertain [Ref. 38, pp. 379-384].

Because these unforeseeable effects may hamper the decision-making process in crisis, the most capable individual in the group should be designated as superior and given the additional necessary authority.

h. Implementing Decisions

Basically there is no major difference between implementing decisions under normal and crisis conditions. Nevertheless, two factors are more important in crises:

First, the psychological aspect of how to implement solutions to problems can be of vital importance. Measures aimed at fighting crises normally require unusual efforts and sacrifices and are therefore not popular. Hence, implementation is a delicate affair and should not be neglected by the decision maker. The best people must get involved in this important step.

David Lilienthal, former director of TVA, underlines the importance of the implementation step:

> There is an unfortunate lack of distinction between a plan and accomplishment ... Too many business people - and government administrators - believe 'We have a plan, therefore the job is done.' Most of the time what we need ... is a simple answer to 'How do we get it done - now.' [cited in Ref. 8, p. 157]

Second, tight control becomes extremely important as it not only helps leadership or management to check results, but it also gives a highly needed, stable framework for the subordinates.

V. CONCLUSION: AN INTEGRATIVE DECISION-MAKING MODEL

Appendix II shows the entire decision-making process graphically and should be consulted when reading the following text.

A. PRELIMINARY MEASURES

The purpose of all preliminary measures is two-fold. First, they save time in case of crisis and second, they help to reduce or eliminate some foreseeable impacts of crises on the decision-making process.

The following measures should be taken during normal times:

1. Self-Evaluation and Education of the Leader or Manager

> Successful leadership depends on an ability to apply skills acquired through experience, study and observation. One of these skills is that of guiding the efforts of others in the right direction without a strict use of the authority, prestige and power associated with a given position. [Ref. 46, p. 437]

This excellent summary of leadership qualities should encourage the leader or manager to improve his own skills continuously, because he will need them desperately in crises. In addition, he needs

> the skill to put that extra fire into an organization - that plus which enables it to win when the chips are down, which causes it to get through a crisis, which enables it to do more than anyone anticipated it could do. [Ref. 3, p. 113]

Crises can be anticipated by imagination, and solutions can be developed during normal times. This mental exercise or "individual war gaming" should be done frequently. It will not only help to reduce the surprise effect and to save time in acute crises, but it will improve normal management too. Management by exception or by objectives should allow the time necessary to anticipate possible future developments.

2. Screening of the Staff Members

It is important to know:

- The psychologically balanced and physically resistant people who probably will not have surprising reactions during crises. The physical condition is important because crisis management means restless activities over hours or even days. Breakdowns, with their inherent problem of changing behavioral patterns, are dangerous. Experiments done by Levin suggest that individuals who have gone through mild environmental stresses during their development, are more resistant to stress than those who were well protected. [cited in Ref. 31, p. 378]
- The mentally flexible people who show leadership qualities and have the ability to see problems in their general context. These staff members, called "generalists," are candidates to head task forces or be members of a "nucleus."

- The egoistic power strugglers that are not goal oriented but self oriented only. They should be eliminated from crisis management and put in positions where they don't hamper the decision-making process.
- The people who have a positive critical view. They should be put into a place where they can play a devil's advocate role. On the other hand, staff members who are chronic fault finders, waste time and energy, and should therefore be eliminated from participation in crisis management.
- The people who are trusted and checked to handle classified information and material.

3. Improving Staff-Line Relationship

L. Allen mentions the following general, mutual complaints:

- Staff tends to assume line authority
- Staff does not give sound advice
- Staff steals credit (for successful programs)
- Staff fails to see the whole picture
- Line does not make proper use of staff
- Line resists new ideas
- Line does not give staff enough authority [Ref. 1, pp. 380-381]

These complaints show potential mistrust, hence, conflict which can have negative effects, especially in crises, when feelings are no longer repressed.

Increased interaction and managerial emphasis on improved technology transfer between line and staff should help to create better mutual understanding.

4. Establishment of a Basic Crisis Organization Chart

An important general rule to observe is that of maintaining the existing group structure as much as possible, even if tasks change.

The basic crisis organization chart has to be adapted to the prevailing situation in the event of a crisis, but can at least be applied "as is" at the beginning. Figure 9 shows a possible crisis-organization chart, based on the idea of a parallel decision making, as described on pages 62-67.

Some explanations:

The task force "normal operations" has to manage the still on-going normal operations, whereas the other task forces and the "external aid team" concentrate on crisis management. The task of the "external aid team" is to look for help from the environment, especially governmental agencies, affiliated organizations or even competitors and to make proposals for the help's integration. The "information and communication center" gathers all information and spreads it. It seeks to close information loopholes by active reconnaissance and to establish needed communications in accordance with the chief of staff. In addition, it filters the information.

The chief of public relations should be directly accountable to the responsible leader or manager in order to

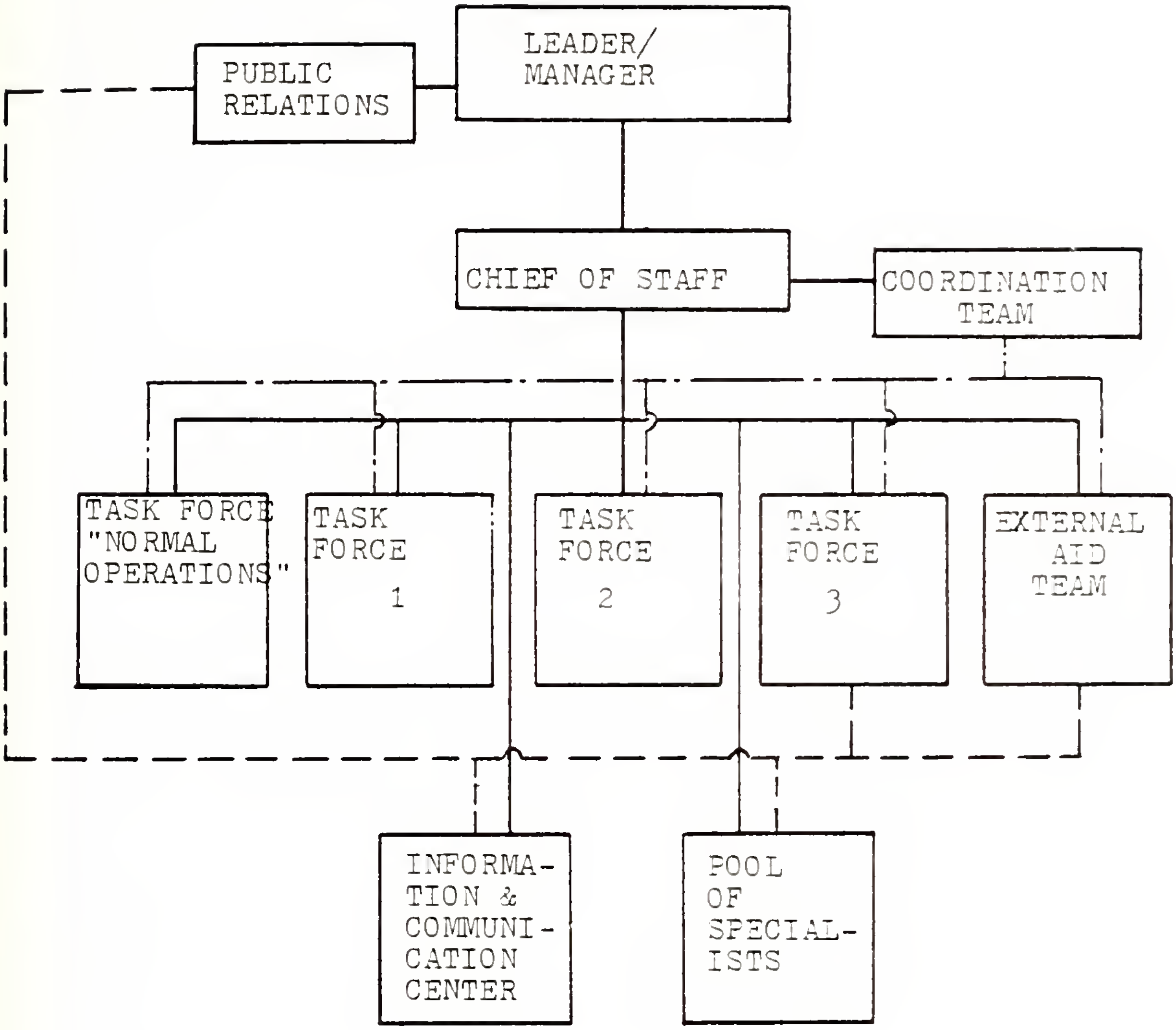


Figure 9

Basic Crisis Organization Chart

The chart may serve to start crisis decision making rapidly but should then be adapted to the prevailing situation.

————	subordination
—·—·—	subordination for coordination only
-------	information exchange only

do his job in strict accordance with the prevailing policy. Everybody in the organization must know that only the PR department is authorized to give information to the outside.

The idea of the "pool of specialists" is described on page 60.

5. War Gaming

To be more accurate, "crisis management games" involving staff and line people should be carried out periodically. Such games help individuals to think about different possibilities of crises and give them hints on how to handle them. They serve also to test people and the crisis organization.

As a result, much uncertainty is eliminated in the case of an actual crises. In addition, weak points in the on-going activities might come up and can be eliminated following this training.

It is important that crisis management games last long enough and are sufficiently difficult so that the psychologically unbalanced or physically weak people can be noticed.

B. PROCEDURE IN AN ON-GOING CRISIS

1. Coping with the Psychological Disequilibrium

The leader or manager must have three possible spots of disequilibrium in mind

- himself
- his staff
- people in the crisis center

It is dangerous to act before the leader or manager and his staff have regained an equilibrium which allows sound decision making.

The personality of the leader or manager is a crucial point here. If he looks confident and "cool," this attitude will soon influence his staff. In order to calm down people in the crisis part, accurate and quick information and goal-oriented action, either by the leader/manager himself or a competent deputy, is absolutely necessary. This cannot be stressed enough.

2. Gathering of Facts and Immediate Countermeasures

After gathering the most important facts and making a very rough structuring of the upcoming problems, a first, time-related discrimination must be made. Some problems might obviously need immediate action without previous, detailed analysis. Hence, the prevailing situation should be screened for such necessities and those actions should be taken with high priority.

3. Relating the Crisis to the Whole

Because crisis situations tend to dominate manager's minds, it is important to estimate roughly and rapidly what percentage of the leader's or manager's scope of responsibility is affected by crisis. In the military, this percentage may be expressed in organizational units such as companies or battalions, or in the amount of firepower, strong points, ships, aircrafts,or other equipment affected. In business

it is interesting to know what percentages of sales volume, production, labor, raw materials, buildings, equipment and other assets are affected by crisis. Establishing this relationship can help to avoid over-emphasizing the crisis and neglecting the more important remainder.

Estimating this percentage should in no way delay the decision-making process. If a rough estimate (for example it is 10, 25, 50%) cannot be made within minutes, as may be the case in an A-plant accident, it has to be handled as a normal lack-of-information problem by the information and communication center. The leader or manager should in this case immediately go to step 4.

4. Looking For Reasons

The leader or manager should make an early determination as to which elements of the external or internal environment, or which factors in his own organization, caused the crisis. Hence, when proceeding to step 5 (problem structuring), both causes and effects of crises should be kept in mind. Depending on the situation, it might be worthwhile to assign to a special task force the problem of determining how to diminish or eliminate the causes.

5. Structuring the Problems

The leader/manager alone, or together with key staff members, must list all the problems. Then the problems should be structured as described on pages 57-60 and Appendix I. With the resulting ranking order, the priorities are set.

6. Adaption of the Basic Crisis Organization

When the problems are structured, the existing basic crisis organization (as determined in the crisis organization chart) must be adapted to the actual situation.

7. Assignment of Problems to the Task Forces

If the parallel decision-making procedure was chosen, the problems must be assigned to different task forces. The task forces should know very precisely their objectives and the amount of authority each was delegated, especially what decisions they are not allowed to make without consensus of the superior. Then they work according to the normal decision-making procedures as described in IV.A on pages 47-51.

8. Establishing a Time Budget

Calculating back from the latest time when measures must be implemented before they become obsolete, the following latest acceptable times for each of the problems must be estimated by the coordination team:

- start of implementation in the crisis center
- time when involved people in the crisis center must know about the decisions made by the crisis command or management
- time when the staff must have finished documents (orders, directives) and other measures in order to transmit them to the recipients

- time when the leader/manager must have made the decisions

The resulting timetable is a crucial instrument of control for the chief of staff, the coordination team and also partially for the leader or manager.

If estimates are difficult to make, it might be useful if the task forces make them.

9. Coordination and Control

Independently of the decision-making procedure, sequential or parallel, chosen, coordination of the work to be done on the several problems and strict enforcement of compliance with the time budget, now become crucial. If a chief of staff or a special coordination team exists, the leader or manager is free to either visit the center of crisis or concentrate checking on the most important problems.

The coordination must make sure that the crisis affected subordinates are not given too many separate orders and directives for each problem, but instead one well-coordinated and integrated set.

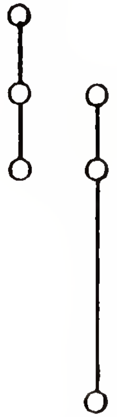
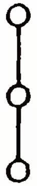
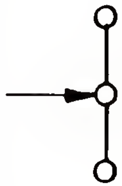
10. Implementation

As described earlier on page 79 , the leader or manager must pay special attention to the psychological procedure of implementation and the control structure.

VI. FINAL REMARKS

Crisis management is neither an art nor pure technique, but it requires higher skills than normal management in two aspects. First, the psychological impacts of a crisis require a better understanding of human needs and behavior. Second, much more flexibility and intelligence is necessary to handle the managerial tools such as: problem analysis, development and evaluation of alternative solutions, setting priorities, making choices under conditions of high uncertainty, adapting organizational structures, gathering and evaluating information and handling communications. While personality plays a crucial role in the first aspect, training can help to improve the ability to master the managerial tools.

Time and money spent in effective preliminary measures will not only pay off greatly in crises, but may also improve normal management. Nevertheless, crises need strong personalities with high skills and - luck.

Problems As They Are Perceived (In Addition to Normal Operations)	STEP 1: Ranking Following Primary Importance	STEP 2: Ranking Following Time Constraints	STEP 3: Combined Ranking	STEP 4: Determination of Interaction	STEP 5: Discard of Unimportant Problems (Shown Below: Remaining Problems)	STEP 6: Elimination of Obsolete Problems, Maintaining Their Impact on Others (In Case Below: Problem D)
Ⓐ	Ⓒ	Ⓓ	Ⓐ		Ⓐ 	Ⓐ 
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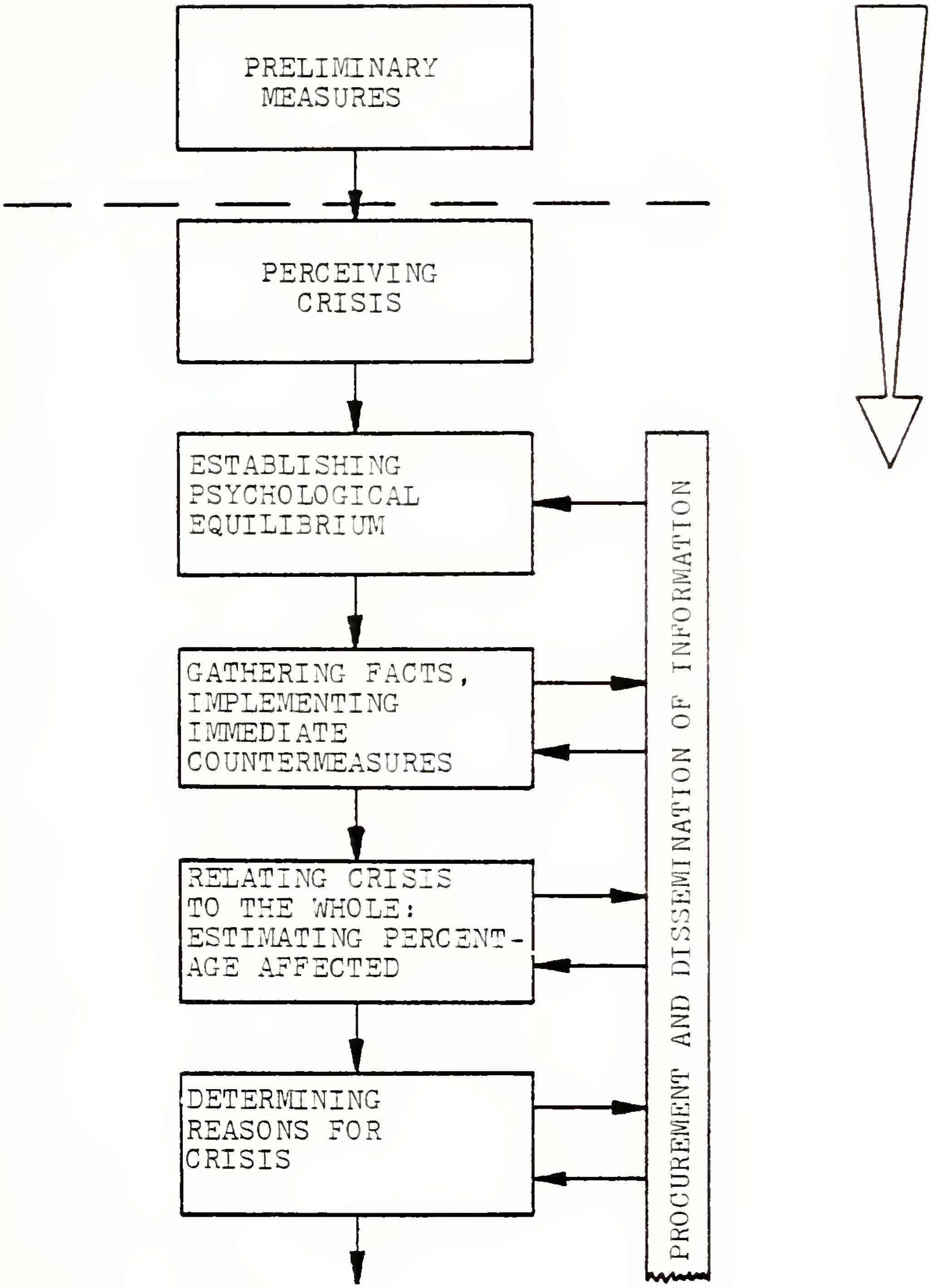
Appendix 1

STRUCTURING PROBLEMS

Following steps 1 to 6 allows to structure the crisis systematically.

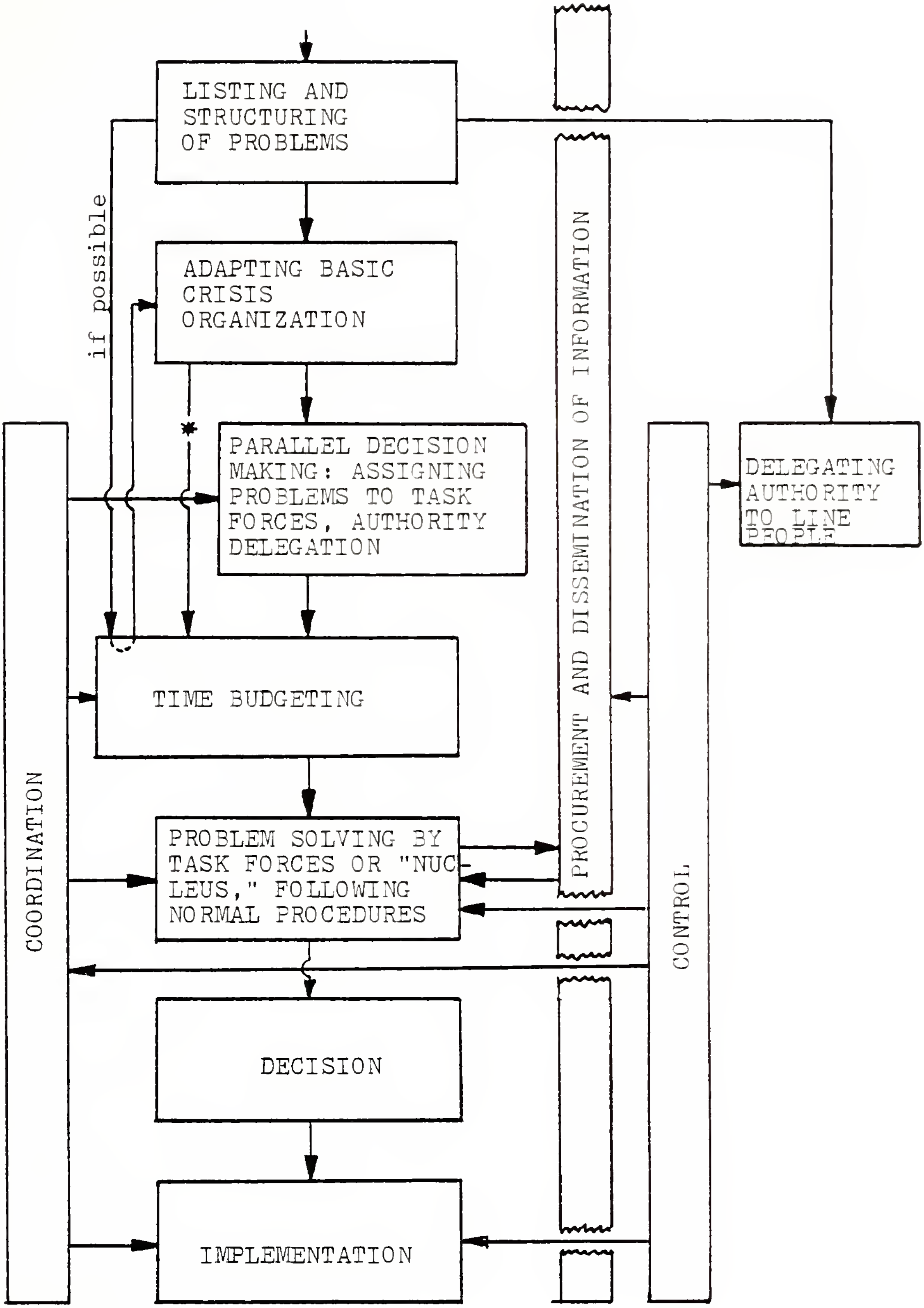

PRELIMINARY MEASURES
PERCEIVING CRISIS
ESTABLISHING PSYCHOLOGICAL EQUILIBRIUM
GATHERING FACTS, IMPLEMENTING IMMEDIATE COUNTERMEASURES
RELATING CRISIS TO THE WHOLE: ESTIMATING PERCENTAGE AFFECTED
DETERMINING REASONS FOR CRISIS
PROCUREMENT AND DISSEMINATION OF INFORMATION

(Continued on page 93)

Appendix II

INTEGRATIVE CRISIS DECISION MAKING MODEL

(continued from page 92)


LISTING AND STRUCTURING OF PROBLEMS
ADAPTING BASIC CRISIS ORGANIZATION
if possible
*
PARALLEL DECISION MAKING: ASSIGNING PROBLEMS TO TASK FORCES, AUTHORITY DELEGATION
DELEGATING AUTHORITY TO LINE PEOPLE
TIME BUDGETING
PROBLEM SOLVING BY TASK FORCES OR "NUCLEUS," FOLLOWING NORMAL PROCEDURES
DECISION
IMPLEMENTATION
COORDINATION
PROCUREMENT AND DISSEMINATION OF INFORMATION
CONTROL

* if sequential decision making was chosen

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